Telephony.

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How A Local Telephone Company Helps Its Community

Just how important a locally-owned and locally-controlled telephone company is to the community it serves was told in a most impressive fashion by John P. Boylan in a recent address over the radio. Mr. Boylan is the president of the Rochester (N. Y.) Telephone Corp., and his recital of what the operations of his company mean to his city—although given in plain words and figures—is one of the most striking examples of effective telephone publicity that has come to notice in a long time.

* * * *

As pointed out by President Boylan, Rochester not only enjoys most modern telephone service, but his company also gives back to the city the bulk of its revenues in the shape of taxes, wages to its many employes who are local people, dividends and interest on company securities held by the home folks, and the huge sums spent for equipment and materials, which also go to Rochester manufacturers and dealers.

Probably few people ever stopped to think of these angles of the situation, but the statements and figures presented by Mr. Boylan—which were also published in the local press—must have given the public a most favorable reaction regarding their home telephone company.

* * * *

In the nine years since the Rochester Telephone Corp. assumed responsibility for the telephone service in the Rochester area, it has seen its number of telephones grow from 52,000 to 109,000, and the value of the plant from a little less than $7,000,000 to nearly $19,000,000. In the Rochester territory there is now one telephone for every four persons.

The 1,800 employes represent an annual payroll of $2,600,000, which is paid to residents of the city. In 1929 the company paid the city in taxes $323,000, which made it one of the largest supporters of the local government. During the year it also distributed over $700,000 to the people of Rochester in dividends and interest payments.

* * * *

In the last nine years it has paid nearly $4,000,000 to its local manufacturers of equipment and supplies, while in 1931 the company will spend $2,500,000 in new construction, and during the next five years will devote over $12,000,000 to extensions and improvements, all of which will add to Rochester's prosperity.

Consideration of these facts ought too bring about the fulfillment of President Boylan's expressed wish that his company continue to enjoy the good will of the people of Rochester.

* * * *

Speaking of the amazing development of the telephone, President Boylan had this to say:

"This quiet, unobtrusive instrument, which a child could easily carry, has literally made a neighborhood of the civilized world, and placed almost everyone in it in the position of being able to talk to anyone else by the simple expression of his wish to do so.

Within the memory of men still living, it took weeks to carry a message across the country, and other weeks to deliver the reply. Today a message can be carried half-way around the world, and the reply received to it, in a fraction of a second so small that only scientists can measure it. We of this present age are so accustomed to the marvelous that we accept without much notice, or even the raising of an eyebrow, the most astounding accomplishments.

Outwardly, the telephone is the same in appearance, except for some style changes, as it was a quarter of a century ago. But it has been only about 15 years since transcontinental telephony began, and it has been only a little more than that since telephoning to New York was not only an event, but sometimes a not altogether happy experience."

* * * *

Stating that the Rochester company handles 400,000 telephone messages every business day, and often as many as 40,000 an hour, Mr. Boylan added:

"What an army of messengers would be required to carry these messages, and what an army would be required to rush back with the replies! Can you picture the traffic congestion which 40,000 messengers rushing hither and thither on their errands, and another 40,000 with the answers, would produce?

No, you can't; it is simply inconceivable

—just as inconceivable as carrying on the complexity of present-day social and business intercourse without the telephone."

Getting New Business.

Telephone companies that are making an organized, aggressive campaign to get new business—and their number is increasing—are finding their efforts successful. The Illinois Southeastern and the Illinois Consolidated companies, for instance, report an 8 per cent gain in stations during their 30-day drive, which convinced the management that additional business can be obtained by the right kind of planning and work.

The campaign to extend telephone service is receiving commendation from local newspapers. One editorial reference, from the Hillsboro Journal, contains ideas that all telephone companies might adopt with profit. It says:

"The Hillsboro employes of the company found that there were many persons who actually had a need for telephones, but who had not installed one because—and this is the point to the story—they had not been reminded that they needed one.

Stories with morals aren't so popular these days, but this story wouldn't be complete without its moral. Until recent years utility companies did little institutional advertising and made little attempt at actual salesmanship. They operated the mechanical end of the business, but the fact that every business has to have a sales department did not impress itself on the minds of the utility people.

Now utilities are in the front rank of salesmanship. They co-ordinate newspaper advertising, magazine advertising and direct mail, and they send salesmen to homes to tell people the advantages of modern inventions and of utility service. They show the people how the installation of a telephone saves energy and sometimes wrinkles for the housewife."

* * * *

Incidentally, there never was a better time than the present for telephone companies to obtain favorable publicity regarding new construction and improvements, which, of course, builds good will for them. Local newspapers and civic organizations, in their efforts to reduce unemployment and stimulate business, are more eager to broadcast plans of greater industrial activity now than when times are brisk and development is the ordinary routine.

Telephone companies that are erecting new buildings, rebuilding lines, putting in new switchboards, making new extensions, or, in fact, doing anything in the way of new construction, should not fail to let their local newspapers know about it, and receive the benefit of the favorable publicity that such events are now getting.

All companies are doing something along these lines, and the indications are that the coming spring will see an unusually active building season. The business slump caused a material drop in many commodity prices, and far-sighted buyers are taking advantage of the situation.

Buy now in order to stimulate business, advise the economists. Likewise, buy now and save money on purchases of materials.

COMING CONVENTIONS

Minnesota Telephone Association, Hotel Lowry, St. Paul, January 27-29.

Nebraska Telephone Association, Lincoln, Hotel Lincoln, February 10-12.

Oklahoma Utilities Association, Oklahoma City, March 10, 11 and 12.

Texas Independent Telephone Association, Fort Worth, Texas Hotel, March 17, 18 and 19.

Iowa Independent Telephone Association, Hotel Fort Des Moines, Des Moines, April 7, 8 and 9.

Indiana Telephone Association, Claypool Hotel, Indianapolis, May 6 and 7.

Up-State Telephone Association of New York, Seneca Hotel, Rochester, May 20 and 21.

Pennsylvania State Telephone & Traffic Association, Hotel Penn Harris, Harrisburg, May 26, 27 and 28.

Kansas Telephone Association, The Sunflower Hotel, Abilene, June 2-4.

The Problem of Local Call Completion

Part Employes of Various Departments Can Play in Improving Local Completion Results—Expectancies in Completion of Calls—What Can Be Done by Traffic Employes—Talk at Annual Traffic Conference of Illinois Association

By A. D. Spaulding,

Division Traffic Supervisor, Illinois Bell Telephone Co., Chicago, Ill.

If today you had given me the world,
I would have made it great;
For just today did I control
The hand that guides my fate.

How many of you feel that way today? How many of you have felt that way at some time or another in your lives? One such blessed day, or at least one such blessed moment, seems to be given to all of us in the course of events. That is just the way I feel when given the opportunity to discuss a traffic problem before traffic people. It's an opportunity, an opportunity to put some message across, that should benefit the listeners as well as the speaker.

The opportunity to discuss "local completion" is a blessing in disguise, for the subject is comparatively new and little if anything is known about it. It also presents the paradox of having been with us all of these years, but little if anything having been done about it, specifically.

For the purpose of understanding my subject, let me make clear at this time the definition of a completed and uncompleted call.

A "completed call" is an originating call that is connected to the right called number upon which an answer is obtained from the called station.

An "uncompleted call" is an originating call that is not connected to the right called number, or upon which the calling subscriber received a busy report, a don't answer report, or an out-of-order report regarding the called number. It also includes those calls as uncompleted where the calling subscriber abandons the call; that is, does not wait long enough for the called station to answer, due to equipment reactions, or due to operating reactions.

Local call completion in its broader aspect is nothing more than giving subscribers satisfactory service. Satisfactory subscriber's service in its broader aspect is nothing more than completing each call offered, for when a telephone subscriber calls a number he wants that number, not another number, and he wants to talk to that number at that time.

He doesn't consider the call as satisfactory when he encounters a busy report, an OD report or a DA report. These conditions interfere with the call and mean the subscriber must call again.

It is recognized, however, that every tele-

phone call cannot be completed on first attempt. While this is true, it is also true that a good many more connections can be completed on first attempt than are now being completed.

Statistics giving some indication of the value of efforts directed toward improving local call completion are of interest, for they bear out the significance of the problem and its relation to subscriber service.

There are approximately 22 billion originating local calls throughout the Bell System in an average year. On this basis, a 1 per cent improvement in local call completion would mean an additional 221,105,000 calls completed on first attempt each year.

Let us next consider the case of Peoria, our convention city. There are slightly more than 25,000 telephones in Peoria. If a 1 per cent improvement in local call completion were made here, it would mean 530,000 more calls completed in a year's time. This 530,000 represents just so many more satisfactory telephone contacts. This amount of improved subscriber's satisfaction can mean a lot in building good-will for the company.

However, let's not get the impression that this is a huge thing we are working with, because it is not. The thing that may seem huge about the subject is the result; and that is something that does not come until we have tackled the day-to-day problem of completion.

For years our toll operators have been "completion minded" and as a result they complete a very high percentage of the calls offered. This completion consciousness on the part of our toll operators was not obtained in a day, but only after many months of hard work.

The same thing will some day be said of our local operators, if and when they become interested in the completion of each local call handled. This is not a remote possibility but is one toward which we can all direct our efforts.

To properly consider the problem of local completion we must admit early in the treatment of the subject that it is not a one-department job—that it is not a traffic department job exclusively. Best local completion results can only be obtained when all departments of the telephone company work together with this object in view.

Another fundamental starting point is to know that no great strides—or better still, no great improvement—can be made in any one item or through any one practice or change in practice, for it is only through a slight improvement, in many features of our work, that any improvement will be effected.

Local completion may, therefore, be considered as a job or responsibility of all departments, for all employes, all the time. This responsibility on the job cannot be side-stepped or avoided, no matter what your particular job may be, for I venture to say that if you are an operator, supervisor, chief operator, clerk, lineman, repairman, installer, or commercial manager, some part of your daily work affects local call completion.

If this is true, we can readily see how important it is to begin at the beginning and tell every employe the story of local call completion. Mind you, every employe must know the why and how of local completion, and where he or she fits into the scheme of improving present results.

It would take too long to detail the part plant and commercial employes must play

"Completion Consciousness on the Part of Our Toll Operators Was Not Obtained in a Day," Says Mr. Spaulding, "But Only After Months of Hard Work. The Same Thing Will Some Day Be Said of Our Local Operators."

in this old job under a new name, but suffice to say they should all do a better job of their present job and the results will have a decided bearing on local call completion. Let me explain:

1. Let a plant installer so install the telephone instruments in the subscriber's premises that a minimum amount of repair trouble will occur.

2. Let a plant repairman so repair a subscriber's set and make sufficient inspection of the entire equipment to avoid future trouble.

3. Let the commercial employe who signs up the subscriber have an understanding with the subscriber about a few of the simple rules of the service such as reporting his line promptly when it is out of order, advising the chief operator of service difficulties when encountered, when calling a number to wait on the line a sufficient length of time for the called station to answer, etc.

4. Let all commercial employes be sure the subscriber is sold the proper type of service best suited to his needs, and that he has been sold adequate facilities.

5. Let all plant central office maintenance forces so maintain the switchboards, jacks, cords, plugs, signals, etc., that a minimum amount of trouble occurs.

These are just a few of the many ways in which other department employes can cooperate with the traffic forces in improving completion results.

Having given a brief idea of the part other departments can play in this work, I shall continue with the major problem of this talk, which is to outline and consider the entire problem from the viewpoint of the central office traffic forces.

In order to properly treat this problem from the purely traffic viewpoint, we must admit that our primary job is to increase the number of local calls being completed on first attempt. In order to do this we must:

Reduce the number of calls encountering a "Busy" condition.

Reduce the number of calls encountering a "Don't Answer" condition.

Reduce the number of calls where the calling party does not wait a sufficient length of time for the called party to answer.

Reduce the number of "Abandoned Calls."

Before proceeding with the detail of how these things might be done, it is desirable to build a foundation for the entire problem in the office. In order to do this it is essential that we appeal to the force as a whole, representing as they do the instrument through which it is hoped to accomplish the desired improvement.

This means that each operator and supervisor must be told of the completion problem and what it means. Some of the items to point out in a discussion of this character include:

1. More completed calls mean greater subscriber satisfaction.

2. Less subsequent attempts from subscribers mean less switchboard equipment required.

3. Less attempts and less equipment mean greater economy of operation.

4. Point out the different types of ineffective calls, and be sure each employe understands them.

5. Solicit their cooperation in reducing the volume of ineffective calls through pointing out various measures that they can undertake to accomplish this.

6. Where results for the office are measured or measurable, such as in service-observed offices, or through central-office monitoring or instruction, explain the results being obtained and point out those features that can be further improved.

Tables of expectancies for various classes of service have been designed and indicate what can reasonably be expected in the line of completion results. These tables indicate there is considerable difference in the expectancy between certain classes of service, such as between one-party and four-party lines, between business and residence lines, etc.; but these

differences are reasonable when we consider line usage probabilities.

The following table shows the expected completion of 1,000 calls by various classes of service in a single office city:

1. Out of 1,000 calls for a P. B. X.;
   943 should be completed,
   22 can encounter a busy condition,
   27 can encounter a DA or DW condition,
   8 can be abandoned.
2. Out of 1,000 calls for a one-party flat-rate business line;
   873 should be completed,
   72 can encounter a busy condition,
   47 can encounter a DA or DW condition,
   8 can be abandoned.
3. Out of 1,000 calls for a one-party flat-rate residence line;
   836 should be completed,
   79 can encounter a busy condition,
   77 can encounter a DA or DW condition,
   8 can be abandoned.
4. Out of 1,000 calls for a two-party flat-rate residence line;
   816 should be completed,
   94 can encounter a busy condition,
   82 can encounter a DA or DW condition,
   8 can be abandoned.
5. Out of 1,000 calls for a four-party flat-rate residence line;
   760 should be completed,
   130 can encounter a busy condition,
   102 can encounter a DA or DW condition,
   8 can be abandoned.

It should be noted that the busy condition allowance is greater for a party line as compared to the individual line and that the "Don't Answer" or "Don't Wait" condition is allowed more leeway on the residence telephone as compared to the business line. In order to better understand the difference between a subscriber don't wait condition and an abandoned call, let it be understood:

A don't wait condition is caused where the calling subscriber terminates the attempt, with ringing signal on the line, before the called station answers or before the operator gives a "DA" report, or where the calling party fails to wait on the line for at least 20 seconds, although no ringing signal, busy or other report is received from the operator.

An abandoned call is where the calling subscriber terminates the attempt after wating more than 20 seconds without having received an answer, a ringing or busy signal, or report from the operator.

Knowing now something of what to expect in completion results, it should be a fairly simple task to apply these expectancies in terms of per cents to the actual count of stations, by class of service, for your office, and from this determine the completion objective. Completion objectives for most of our offices range from 80 per cent to 85 per cent, depending, of course, on the station fill by class of service.

It should be remembered that this objective is reasonable, and as a result your office may already be meeting or beating its objective. In this event, the objective should arbitrarily be raised to a slightly higher figure in order to offer incentive for achievement. Thus the primary purpose of a completion objective for an office is to have a target or goal that can be met but still offers incentive for increased efforts.

One other purpose that the objective will serve is to indicate the allowable limits for each class of ineffective calls. For example, 85 per cent completion objective, 7.6 busy allowance, 6.6 per cent DA or DW allowance, 0.8 per cent abandoned allowance. Knowing these ineffective call allowances, the problem becomes one of keeping each class of ineffective call within these objective limits.

With this background to the subject, we can now proceed to a consideration of the problem from the viewpoint of the operator, supervisor and chief operator.

Admitting that the way to improve local completion is through reducing the volume of ineffective calls, how best can the operator assist in furthering this work?

Taking the busy calls as a starting point, what can be done by the "A" or "B" operators at the switchboard that will improve this condition?

First, all operators can so improve their technical skill as operators that their work will more nearly represent perfection.

Second, excessively busy subscribers' lines can be referred by the operator to her supervisor or chief operator so a special busy study can be made of the line or lines to serve as a basis by the commercial department in trying to sell the subscribers additional lines.

Third, all calls for groups of lines of two or more can be tested by the operator a second and a third time before giving the busy report.

Fourth, all operators can think of their work in terms of completed connections so they will concentrate more definitely on various features of their work that involve the completing of the call.

Reduction of Busy Reports.

Under the first and fourth paragraphs the features of an operator's work that would tend to reduce the volume of busy calls should include:

1. Being sure to test the right called number.

2. Being sure to take a proper slant test in order to correctly determine if the line is busy.

3. Being sure to distinguish between the busy and out-of-order tone so as not to give the subscriber a false report.

4. If a "B" operator, being sure not to insert the cord in a busy-back jack unless the line is busy.

5. When a busy record is being taken on a line or group of lines, being sure to tally a call each time the busy report is given.

In order to overcome a high volume of don't answer and don't wait conditions, the following steps can be taken by the "A" or "B" operators:

First, all operators can so improve their technical skill as operators that their work will more nearly represent perfection.

Second, all calling subscribers who do not wait long enough for the called station to answer, can be reported to the supervisor or chief operator.

Third, all stations that don't answer repeatedly, or where the calling subscriber insists they should answer, should be reported to the supervisor or chief operator.

Fourth, all calls where mechanical ringing is involved, whether over a trunk or in the local multiple, should be monitored by the operator as soon after establishing the connection as possible, to be sure the ringing feature is operating.

Fifth, all operators can think of their work in terms of completed connections so they will concentrate more definitely on various features of their work that involve the completing of the call.

Under the first and fifth paragraphs of the foregoing, the features of an operator's work that would tend to reduce the volume of DA or DW calls should include:

1. Being sure to connect to the right called number.

2. Being sure to seat the plug in the jack so the ringing current will pass out on the line.

3. Being sure to ring a good two-second ring with the proper ringing key.

4. Being sure to follow up unanswered connections so that regular supplementary rings are given and that they are each of two seconds' duration.

5. On party lines, being doubly sure of operating the right party-line ringing key as well as the master key if necessary.

6. Being sure to acknowledge the call distinctly in the hearing of the calling party so he will remain on the line.

7. Being sure to give voluntary supervision reports promptly where no audible ringing signal is provided.

8. Being sure to give a preliminary DA report at the end of two minutes but to continue with trying to complete the call where the calling party remains on the line.

9. Being sure to give the final DA report at the end of three minutes but not before.

In order to reduce the volume of abandoned calls, the following steps can be undertaken by the "A" or "B" operators:

First, all operators can so improve their technical skill as operators that their work will more nearly represent perfection.

Second, all operators can think of their work in terms of completed connections so they will concentrate more definitely on various features of their work that involve the completing of the call.

Under both of these conditions mentioned, the features of an operator's work that would tend to reduce the volume of abandoned calls should include:

1. Being sure to connect to the right number, for if a wrong number is reached, the subscriber may abandon the call.

2. Being sure to advance the call promptly so the subscriber receives the ringing signal or other report, so he will know his call is receiving attention.

3. Being sure to note switchboard markings or intercepting bulletins so connection will not be made on a non-working line.

Each of these features mentioned thus in connection with the work of the operator has a big bearing on the local call completion results. Indifferent and careless operators, who are not careful of these items, can severely affect results. The next step is, therefore, to consider what the supervisor can do to further this work.

First, having the supervisor "call completion conscious" will tend to direct her attention to those features of her work that have most to do with these results. This means that a supervisor must be on the alert to detect any faulty completion practices of her operators and arrange to correct these practices at the first opportunity.

Next, a supervisor through her direction of her force can inspire and maintain interest in all good completion operating practices. Operators must be encouraged to note and report certain conditions and here the supervisor can play a big part through proper encouragement.

Last, the supervisor must set the example in the use of correct practices and never overlook an opportunity to win her operators fully on these matters. Through the proper display of interest, pep and enthusiasm on completion, a supervisor can influence the actions of her operators.

Supervisors should make it a point to inform each operator from time to time of the progress being made in the office. An occasional discussion with each operator away from the switchboard, devoted entirely to completion, will prove a big help in carrying on the work.

We must next consider the opportunities and responsibilites a chief operator has in connection with completion results. The chief operator is usually the manager of the central office, and as such she must head and direct all completion activities.

To start with, the chief operator should know the office completion objective, as well as past and present results. If no past results are available, she should make it a point to obtain present results and follow these carefully.

The chief operator must organize and direct her operators and supervisors along the line of activity mentioned heretofore. This work, once started, must be carefully planned and followed up in order that the maximum good might be obtained. One way to direct the attention of operators and supervisors to the features involved would be to program one feature after another for a sufficient period of time to permit of everyone knowing their part.

SUCCESS DEFINED.

Success in life is relative. In my judgment, success means making the most of such ability, personality and physique as you have. Don't measure your success against others, but against your own potentialities. Never fret because somebody else has done better.

If you become imbued with that philosophy of life and sincerely try to do the best you can, and achieve the sincere feeling that you are doing the best you are capable of, you have attained as much success as any man can attain. More than that, you will go on that basis just as far as you can go. —Walter S. Gifford, President, American Telephone & Telegraph Co.

The chief operator must arrange for busy studies on all excessively busy lines and see that the results of these studies are turned over to the commercial department for its solicitation of these subscribers.

The chief operator must arrange for all reports of repeatedly DA lines being turned over to the plant department for a test of the equipment. After such an equipment test, the more serious of the cases involved should be reported to the commercial department for its solicitation of the subscriber.

The chief operator must arrange for all reports of repeated DW cases being turned over to the commercial department for its attention.

The chief operator is the major factor in maintaining interest and enthusiasm in the work, and every opportunity must be utilized for this purpose. Regular talks with individual operators and supervisors are essential, as well as talks with various groups such as supervisors, training classes, employe committees, etc.

The chief operator should arrange for an early systematic check of all switchboard markings, intercepting records and underlined group markings in order to be sure that such traffic records are correct.

The chief operator should have prepared a list of all subscribers having two or more lines which are non-auxiliary in telephone number. Such a list should be referred to the commercial department at the first opportunity in order that telephone numbers be changed to provide auxiliary service.

Chief operators should be sure trouble operators are clearing subscribers' lines promptly when trouble comes clear. Lines that do not come clear should be referred to the plant department immediately after the 20-minute tie-up on the trouble position.

The chief operator must see to the provision of operators at trunk boards and other special positions in order that the prompt completing of calls between offices or between boards will not be interfered with.

All in all, the chief operator must be thoroughly sold on all completion activities in order that her forces may adopt the right attitude and follow through to a successful termination of all such efforts.

In conclusion, it is well to point out that it is impossible to adequately cover this subject in a short talk of this character but that a sufficient idea of the scope of the subject has been given so that any office can make a good start in furthering local call completion improvement.

Hawaii Prepares to Connect 23,000 Telephones with U. S.

In Hawaii, 2,000 miles out in the Pacific Ocean, the Mutual Telephone Co. of Honolulu has drawn up an extensive construction program in preparation for the opening of radiotelephone service with the United States, which is now scheduled for 1932.

This new undertaking will further improve the modern telephone systems which serve the four principal islands of the Hawaiian archipelago, and also provides for the construction of radio transmitting and receiving stations to interconnect the several islands. Erection of the powerful radio units necessary to establish commercial telephone service with over 20 million telephones in the United States is one of its outstanding features.

The Hawaiian Islands already have thoroughly modern telephone systems. More than 72 per cent of the 23,000 telephones in the archipelago are dial telephones.

On January 1, 1930, the Hawaiian system ranked seventh in respect to the number of telephones in proportion to population. That these telephones are highly used is revealed by the fact that 71,000,000 calls were made by these 23,000 telephones during 1929—an average of over 3,000 calls for each telephone.

Texas Lineman on Pole Traps Bank Bandits.

L. F. Houston, a lineman of the Southwestern Bell Telephone Co., working high up on a pole in the town of Velasco, Texas, gave an alarm which resulted in the arrest of three men charged with the hold-up of the Velasco State Bank at Velasco.

When the lineman saw the men emerge from the bank, they aroused his suspicions, so he connected his telephone test set to a circuit and called the sheriffs office at Angleton. Within ten minutes all the county roads were blocked and a sheriff's posse had been organized.

The men were arrested in a thicket near Velasco. They gave their names as Jim Collins and Buster Dunn, of Houston, Texas, and Jack Jackson of Chicago.

L. H. Skinner, cashier of the bank, was beaten and tied by three robbers, who had made away with $3,000.

Developing Personalized Service Idea

Applied Personalized Service Registers Favorably with the Public and Is Gratifying to the Telephone Company—Various Incidents Cited Showing How to Courteously Serve Patrons; The Necessity of Keeping Promises

By Mark Mellor,

Commercial Superintendent, The Chesapeake & Potomac Telephone Co., Salisbury, Md.

May I be of service to you? May I assist you?

Thank you, Mr. Patron. We will endeavor to comply with your order.

We are very sorry that the error occured and will immediately issue a voucher to adjust your account.

We regret that you have been inconvenienced by reason of your station being out of order. I will see that immediate attention is given to correct the faulty condition you mention.

May I direct your attention to the fact that your account remains unpaid? Kindly arrange to forward a payment today to clear the account.

Yes, we will grant the extension of time until Monday next to make your payment.

We regret to advise that unless payment is made by Wednesday of this week your contract for service will be terminated and instruments removed.

Permit me to offer a suggestion that will add to your comfort and convenience? An extension station installed upon the second floor of your home will improve your service, not only save you time but also unnecessary steps for such a trifling cost.

Thank you, Mrs. Subscriber, I will issue the necessary orders to have the station installed tomorrow.

Mr. Merchant, perhaps you are not aware of the fact, or perhaps you do realize, that your single line into your place of business is reported "busy" many times each day to your customers who are also our patrons. This means that neither your store nor our employes can render a satisfactory or adequate service to this joint patron.

For an insignificant sum per day, an auxiliary or additional line may be provided so that the situation can be rectified and everyone made happy. I shall be pleased to have a survey and study made to enable you to visualize the conditions I have mentioned.

We do not require the installation of television apparatus to impress upon our minds that the foregoing terminology relates to the modern application of the personalized service idea.

It may even smack, or appear to be, of Grimm's Fairy Tales of many years ago. Perhaps the contrast between former practices, unauthorized or authorized, followed by our contact employes forces us to this conclusion; nevertheless the personalization of service idea is here to stay.

The basic problem is to educate and train the members of the employe body to so conduct themselves in their contacts with the public that this paramount thought will immediately spring foremost in their mind: How can I serve this patron intelligently and efficiently to gratify his requirements and desires? What may I do to create a favorable atmosphere and reaction of this patron towards a better understanding and acceptance of the company's reasonable rules, regulation or policies?

With a comprehensive and continuous educational and training program in effect, this may eventually be accomplished. The cost of such training will be negligible when balanced in dollars or cents against the asset derived and placed as reserve capital in the form of good will and contented public relationship.

It is obvious that it is not possible for each individual employe to follow to its ultimate conclusion the contact matter originated by him. It is apparent, however, that if each employe is taught and imbued with the conscious fact that each phase of his duties is correlated with that of his co-workers and, therefore, should be performed in an accurate and efficient manner. Then he has personally contributed his mite to the personalization of the company's service to that patron.

There are many ramifications behind this appeal to personalize the local service.

It starts with our publicity and advertising matter. Then follow the acceptance of the signed application; the explanation of its terms and conditions, the listing matter, the class of service, the type of instrument, the date when service will be required, the typing of the order.

The assignment of the telephone number, the assignment of the cable pairs and terminal, the actual installation of the service, the furnishing of necessary telephone directory are other steps.

The printing of directory listing in the new directory, the rendering of the service, the maintenance of the equipment, the rendition of bills, the collection of the account, the remittance to the treasurer, the accounting for payment comprise other functions.

The central office switchboard maintenance, engineering for toll line, exchange and outside plant, the construction of exchange and toll lines, the installation of cable facilities, and the appearance of our offices are other items.

All of these functions must be performed by many individual employes to complete but a single contact. The importance of accurate performance is, therefore, vitally essential if we are to successfully consummate the transaction to the entire satisfaction of both the patron and our company.

Assuming that things have been properly done, let's take a peek at the patron's reaction and point of view towards this personalization of the service.

Mr. Patron bustles around to our business office. Upon entering, he beholds our modern counterless office, from which in the larger commercial centers, the mechanical operations have been removed to

Front View of Counterless Business Office of Chesapeake & Potomac Telephone Co., Salisbury, Md.—Another View of the Same Office.

a more secluded spot in order to eliminate confusion and to concentrate work for more efficient disposal.

A contact employe invites him to a seat alongside of his desk. The patron notices the harmonious setting of furniture and office fittings. He accepts the cordial invitation and becomes seated. The atmosphere and environments begin to percolate and register in his mind. The morale and discipline of the office arrest his attention.

The courteous salutation, "May I be of service to you?" arouses his train of thought and reminds him of his objective in making the visit to our business office. He states his problem, uninterrupted, to the contact employe. Having diagnosed the patron's requirements, the employe endeavors to be of real assistance to the patron by suggesting to him the type of service and equipment that the facts submitted may warrant.

This may or may not be what the patron thought he needed. Courteous and positive salesmanship will induce the signing of the application upon the dotted line and the obtaining of pertinent credit information required. Full and complete understanding of the company's collection policies will then be imparted to the patron who, having been correctly informed, will naturally conform thereto.

The negotiations satisfactorily completed, the contact employe arises from his seat to dismiss the patron, at which time the applicant is thanked for his patronage and assured that the installation will be made in accordance with the understanding mutually agreed upon.

The application is then reviewed to verify proper preparation and credit information, after which it is routed to the service order typist who issues the order and forwards it to the plant department within the same day that it is accepted.

Prompt assignment of cable pairs, terminal and telephone number is made and the order then placed in proper file to meet the schedule requirements or date specified by the patron. Upon date due, the installer completes the installation and the traffic department starts the service.

The patron makes this mental note: "The telephone company is at least one concern which keeps its promises and tries to satisfy its customers."

Not observing, or at least forgetting, the printed instructions regarding the reporting of service difficulties, the patron calls the business office to air his trouble. A pleasant voice greets his ears: "Business office, Miss Inviting speaking."

His story told, and the facts carefully recorded, he is thanked for reporting his service impairment, and regrets are expressed that he has been inconvenienced by reason of his station being out of order. "I will see that immediate attention is given to correct the faulty condition you mention" is the parting statement to the patron.

Good Cheer from Texas.

As stated before, there are some companies that are doing their share to keep business moving forward even in times of depression. In a letter enclosing his check for subscription to TELEPHONY, E. D. Selmser, of Freeport, Texas, writes:

"I really think your weekly journal is getting better every year. Your technical articles are great. You have so many fine writers that I do not see how any up-to-date telephone man can get along without TELEPHONY. Please keep my name on the list. I might add that the Freeport Sulphur Co. has kept more men in employment through the past summer than in many years, rebuilding, doing new work, and they are still at it."

The repair service clerk is notified of the trouble at once. The line is tested and the impairment on the circuit located. A troubleman is assigned to clear up the condition; an automobile pressed into service; circuit adjustment made and the service restored. All this has transpired within a few hours.

The patron arrives at his home and finds his telephone working. Score another favorable reaction: "You can depend upon the telephone company to restore its service promptly after notification of difficulty with its equipment."

Upon receipt of his monthly bill and statement of toll charges, the patron observes an item listed thereon which he feels is incorrect. He picks up his telephone once more to confirm his suspicion. This time, in answer to his call, a well-modulated voice replies: "Business office, Mr. Letme Helpyou speaking."

After obtaining all the facts from the patron, the latter is asked to hold the circuit for a moment until the substantiating records may be consulted. It takes but an instant to find them, and only a glance to note that the numerals relating to the station filing the ticket were not quite plainly marked and were chargeable to some other subscriber.

Ample apology is made by the contact employe and a credit voucher immediately issued, the patron being so advised. The subscriber's check received in payment of account the very next day demonstrates his appreciation of the courteous and prompt attention accorded to him, besides excusing us for the original error made in billing him incorrectly. Confidence is thus restored and cordial relationship re-established.

Countless similar incidents might be recorded, but enough have been cited to emphasize the importance of cultivating and sustaining the personalized service idea. Each member of the telephone family is morally obligated to carry on the unwritten but nevertheless traditional "Spirit of Service" ideal which has made the telephone system what it is today, and which we must hand down to posterity, safeguarded, strengthened and fostered through our individual effort.

The more friendly relationship that can be developed and maintained in our contacts with the public, the easier and more pleasant will be our respective duties, besides lightening our daily task in rendering a service that is reasonable, dependable and satisfactory at all times and under all conditions.

Transcontinental Calls to California Increase 400 Per Cent.

The growing importance of Pacific coast business and social relationships in American life is reflected in figures recently given out by the Pacific Telephone & Telegraph Co. showing that transcontinental telephone calls to California in the six years, 1924-29, increased over 400 per cent. In 1924, inter-city telephone calls between New York and Chicago, and San Francisco and Los Angeles totaled 15,000. In 1929, this total was more than 75,000.

The greatest increase in the transcontinental calls came in the years 1927, 1928 and 1929. The calls per year since 1924 were as follows: 1924, 15,000; 1925, 20,000; 1926, 25,000; 1927, 38,000; 1928, 65,000, and 1929, over 75,000.

Telephone calls across the continent use wires of the Pacific Telephone & Telegraph Co. to and from the Utah and Arizona boundaries. The Pacific company is now the western terminal of four transcontinental wire routes in California and of five in all on the coast. These are hooked up with the lines of the American Telephone & Telegraph Co. from the East at the Utah and Arizona borders.

The figures show that the speed with which long distance messages are handled has been increased in recent years. The average time required from the placing of a long distance call to the response of the called party, or until a definite report is made by the operator, has been reduced from seven minutes in 1920 to two minutes in 1926, and about one minute in 1929.

More than 95 per cent of the total long distance calls are completed, or reported upon, while the subscriber remains at the telephone, without requiring him to hang up and be called again.

"Telephone Supplies" Seized by Prohibition Authorities.

A box labeled "telephone supplies" which turned out to be 100 quarts of imported liquors, fell into the hands of prohibition agents at New London, Wis., one day recently.

The consignment, the second shipped from Miami, Fla., and confiscated by federal authorities in New London, was addressed to the "Central Telephone Company." This company however, does not operate in New London and was evidently a fictitious name. "Telephone supplies" generally are not shipped from Florida points as telephone men are aware.

Here and There in Telephone Work

Multiple Connections in Holland for "Telephone Meetings."

The Netherlands government telephone service, after studying the question of affording facilities to trade and industry for "telephone meetings," has recently solved this problem successfully, as a result of which Netherlands business men will shortly be able to participate in wire conferences with from three to six persons located in different parts of the country, according to Commercial Attache Jesse F. Van Wickel, The Hague, in a report to the U. S. Department of Commerce.

A number of official tests produced very satisfactory results and this service was to become in effective in November, 1930. A preliminary schedule of charges has been compiled which later may be revised. The fees are based on:

(a) Preparatory expenses, independent of the length of the conversation, amounting to two units of three minutes for each participant; thus the preparatory expense for three persons amounts to 2x3x50 cents (one unit is charged at 50 Netherlands cents) or 3 florins ($1.20) for four persons 2x4x50 cents or 4 florins ($1.60).

(b) A charge for the conversation, based on the number of units of three minutes multiplied by the number of participants at the rate of 50 cents per three-minute unit. Thus a party of three which talks three minutes has to pay for the actual conversation 1x3x50 cents or 1.50 florins ($0.60) and a party of six persons talking 12 minutes is due 4x6x50 cents or 12 florins ($4.80).

The charges incurred will be collected from the party who puts in the call for the connections.

The Utrecht telephone office will act as the central point for the different connections. The operator there informs all the parties concerned that they are to attend the telephone at a stipulated time; she then informs the applicant and the conversation can start.

It is evident that such a scheme will save much time and expense and it is believed that the system will become popular in The Netherlands.

"I Wonder Why" of an Observing, Traveling Telephone Engineer.

By Ray Blain

I wonder why telephone companies in some towns and cities will continue to maintain aerial cable leads where it is a certainty they will soon be forced to place them underground?

Due to the increase in motor traffic many streets have been widened and the width of the sidewalk reduced. When this takes place, telephone companies are forced to move their poles back to clear the streets; and in many cases a sidewalk only 2½ feet to 3 feet wide will have an 18-inch pole set in it. This reduces the width of the sidewalk at that point to such an extent that pedestrians must pass in single file, and that only one-way traffic.

Such an arrangement might be tolerated in some countries, but it certainly does not add to the popularity of any telephone company in the U. S. A.

It seems that now is the logical time for companies to check over certain leads

An Argument for Underground; Poles Set in Sidewalk Do Not Make for Goodwill.

which will eventually be forced into underground, start the new year right and make plans and buy material so as to be ready to start work as soon as weather conditions will permit in the spring.

There certainly will never be a time when prices of material and cost of labor will be more favorable for the carrying out of major construction projects. It will also be in line with the general policy to improve and maintain business for the company, maintain present rates and keep the average living conditions of the country as a whole above that of any country on the globe. That is a condition we have always enjoyed; shall we sink or swim?

Executives of Lincoln, Neb., Company Hold Conference.

Addressing the annual conference of district managers, local managers, chief operators, plant supervisors and officials of the Lincoln Telephone & Telegraph Co., Lincoln, Neb., on January 3, President Frank H. Woods said that the present general business situation affected the telephone industry like it has other businesses, and that the company has been faced with the problem of forced adjustments.

"During this period of widespread business readjustment," he said, "one of the most perplexing problems has been that of keeping all of our employes intact. In keeping with its responsibility to the public, the company is leaving nothing undone to provide continuous employment for its staffs of men and women.

"The giving of a complete and satisfactory telephone service in every community requires a wide range of vocational activity. The nature of telephone work is such that it requires a large and skilled force, and in many of our departments scientifically trained men are required.

During this period, the company has gone forward with its constructive program in an orderly manner. During 1930 our construction program was one of the largest in the history of the company. Our construction program for 1931 will continue on a large scale. Each one of the difficulties of the past year has been met intelligently and justly.

To correlate the whole telephone job, and to keep our course, requires eternal vigilance. The efficiency and enthusiasm of the entire personnel has never been higher. Perhaps in no business is success more dependent upon the efforts of each individual, and results for the past year reflect the achievement that comes from successful cooperation in a common enterprise." Mr. Woods also paid tribute to the employes who had passed on during the year.

"The company during 1930," said General Manager J. H. Agee, "has improved telephone service in the 22 counties it serves. It has kept down its cost to the user and at the same time installed plant and equipment sufficient to care promptly for new business. Nearly a million and a half dollars were expended for construction. While for the most part this was for facilities to take care of new business, a considerable portion was to provide better facilities to improve service.

"The company now operates more than 83,000 telephones. Increases in the standard of living and the growth of business activity generally, a more accurate and rapid telephone service, a growing appreciation of the value of the service and the continuing efforts of the company to see that every telephone-user in the territory served has adequate facilities for his or her comfortable and convenient use, as well as reasonable rates, all contribute to the growth of the telephone business.

Sales activities have been unusual during the year; and it has been demonstrated that subscribers find personal enjoyment and profit in making liberal use of telephone service. Business men generally are

Children at Christmas Party of Home Telephone & Telegraph Co. Families at Fort Wayne, Ind., After the Visit of Santa Claus.

constantly seeking to reduce expenses, to make more sales, to increase profits. The telephone and telephone service can be of great service in aiding the business world at large in accomplishing these three things.

Salesmanship on the part of the telephone company will be in rendering a splendid service to the public, and will be met with a whole-hearted response on the part of the public, for adequate telephone facilities and the fast dependable service of today, both local and long distance, are saving the users money by saving them time."

Mr. Agee was in charge of the conference, the purposes of which he stated to be:

Review the activities of the past year and look at the problems facing the company in 1931 which have come to the telephone industry with the growth and complexity of the business; discuss the company's program designed to improve the general welfare of the employes and aid them to reach a higher degree of economic security, to the end that provision shall be made for pensions, disability and death benefits and group insurance; point out that there is no standing still in the Lincoln Telephone & Telegraph Co., and as a progressive institution it will lend every effort to help the nation readjust itself to new economic conditions.

Addresses were also made by Commercial Superintendent W. E. Bell, Plant Superintendent M. T. Caster and Traffic Superintendent R. S. Brewster.

Large Christmas of Home Company Family, Fort Wayne, Ind.

Five hundred members of the large Home Telephone & Telegraph Co. family, Fort Wayne, Ind., were present at the Christmas party held Friday night, December 19, in the company's warehouse auditorium. The party was one of the most successful ever held by the employes.

A program of entertainment beginning

THE OTHER WAY OUT

By Miss Anne Barnes,

Traveling Chief Operator, Iowa Independent Telephone Association, Des Moines, Iowa

A little stream of water wended its way unhampered over Stony Point farm where I visited my aunt in my childhood days. The way of that saucy little brook interested me greatly. It was always going—going somewhere.

"What is the hurry?" I used to wonder. "It has all day and all night every day to go where it is going." It never stopped at night for rest like I did, for I could hear it gurgling and splashing onward from my window.

It never stopped on hot afternoons when all nature seemed beaten down under the intense heat pressure of the sun. It seemed never tired nor disheartened, for when the hot thirsty animals sagged over it and dipped their noses into its coolness, it seemed to gurgle and laugh as it bathed their faces with refreshing little splashes.

Unhampered? No; oh, well it had nothing to stop it, like an Aunt Mary who was sure to call me from my play. "How nice it would be to be just like the brook, never having to stop for anything nor anybody," I used to think. But I know now that its course was not always smooth and easy.

I think the brook put the thought in my mind as I watched it meet obstacles, such as jutting-out places in the bank, tree trunks holding ground gradually being washed away from them, and large stones hanging over and beyond its banks.

How did the little brook down on Stony Point farm meet these seemingly impenetrable barriers?

In the same manner that it bubbled and laughingly gurgled over or around the little piles of stone I built out into the water from the bank just for the fun of seeing how it would meet resistance. And so I learned a lesson there from the little brook, which I wish I had taken more seriously; but I was only a child. However, I will pass it on. Perhaps it will help somebody.

Most of us try to mentally visualize the obstacles we are likely to meet out and beyond in our future living. Instead of going on happily *now* like the little brook, we slow down to a what's-the-use gait, thus lessening our zest for going forward in our chosen course. Consequently, when we meet obstacles that are sure to be ahead in any worthwhile effort, we are low in resistance, hampered by the fear of failure. *We don't look for another way out.*

MORAL: Our interruptions are often our greatest blessings.

at 8 o'clock and continuing for more than an hour proved very enjoyable. Vocal and dancing numbers presented by special artists were features of this part of the program.

Edward Sullivan, acting as master of ceremonies, introduced Frank X. Staub, president of the athletic association, who spoke briefly. Otto Marahrens, secretary and general manager of the company, then extended greetings.

Santa Claus, heavily ladened with gifts for the children, interrupted the program in the middle of the evening. Santa read humorous letters he had supposedly received from Frank Bohn, Otto Marahrens, Fred Tellman, John F. Jackson, Henry Krabach, George Wagner, Orville Smith, and several others.

The children were then invited to come upon the stage and receive gifts. Santa, standing beside the fireplace and near a beautifully decorated Christmas tree, distributed the gifts to more than 100 happy kiddies.

The music of an orchestra then held sway and everyone danced. During the dancing, the kiddies were entertained on the stage with various games. Refreshments were served later in the evening.

Boyd Haney was general chairman of the affair. He was assisted by Miss Louise Pohlmeyer, Milton Rogge, Lloyd Wire, Floyd Ferguson, Ralph Zollinger and Clifford McCormick. Other employes assisted on the various committees.

P. B. X. Operating Current; Storage Cell Action During Discharge.

By JOHN A. BRACKEN.

For the production of electric currents of sufficient power and longer duration, the elements or plates of the P. B. X. storage cell have to be suspended as closely together as possible without danger of contact. This is necessary in order to decrease the internal resistance of the plates as far as practical and also to increase the quantity of lead peroxide, expressed chemically as PbO_2.

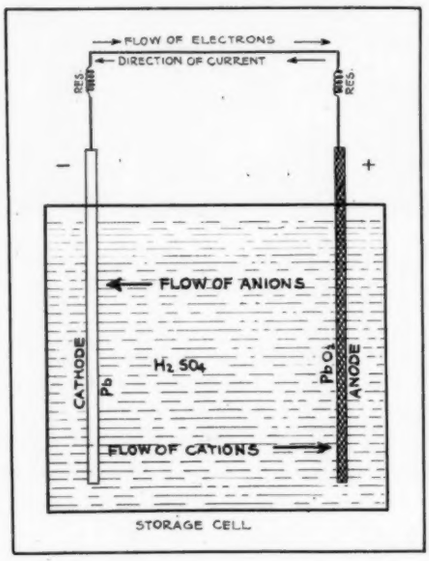
The active material of the positive plates when in a fully-charged condition is composed of peroxide of lead. The active material of the negative plates is spongy lead, Pb. The electrolyte in which the plates are submerged is composed of C. P. sulphuric acid (H_2SO_4) diluted with pure distilled water (H_2O).

During discharge, the active materials of both the positive and negative plates, as well as the electrolyte in the cell, undergo a change. This change consists in electrical pressure being generated by the chemical action within the cell which causes a current of electricity to flow through a closed circuit from the negative plates in the direction of the positive within the cell.

Considering only chemical reactions that affect the active materials of the plates of a lead storage cell during discharge, we have the following explanation as given by several authorities:

When a cell is discharging, the electrolyte at the negative plates is split up into hydrogen (H_2) and the radical (base of a chemical compound) sulphion (SO_4). This sulphion of the electrolyte unites with the lead of the negative plates, Pb, forming the compound known as lead sulphate ($PbSO_4$). The hydrogen (H_2) in the electrolyte passing over to the positive plates (PbO_2), is charged with positive electricity which it gives up to these plates, thus raising their electrical density.

The hydrogen which is librated by the decomposition of the electrolyte at the positive or lead peroxide plate (PbO_2), together with some hydrogen derived from



Relative Flow of the Ions and Elections, and Direction of the Current During Discharge of a P. B. X. Storage Cell.

sulphuric acid (H_2SO_4) in contact with that plate, unites with the oxygen (O) of the lead peroxide and forms water. The sulphuric acid unites with the lead peroxide (positive plate) and changes to lead sulphate ($Pb\ SO_4$).

Thus both positive and negative plates are completely reduced to lead sulphate because lead sulphate has (1) a very high electrical resistance, and (2) lead sulphate is thicker and more bulky and has a tendency to cause the active material of one plate to be slightly farther away from the active material of the plate next to it when they are fully charged. Then, too, lead sulphate in the plate increases the internal resistance of the cells.

Due to the fact that both positive and negative plates are changed to the material lead sulphate, and the electrolyte is practically changed to water, the cells become inactive when discharged, the inactivity becoming more pronounced as the cell approaches this condition. If both positive and negative plates were reduced entirely to lead sulphate, the cell would no longer deliver current, for there would then be but one kind of material present; and a battery must have two unlike materials placed in an electrolyte, which will act chemically upon them, to produce an E. M. F.

There can, however, be no doubt that the lead sulphate which is formed by the action of the sulphuric acid (H_2SO_4) upon the lead plates, plays the principal part in the discharging and charging of a P. B. X. storage battery, due to the decomposition and subsequent reformation of the lead sulphate.

When the chemical energy lost by the materials of a storage cell in their action is not all converted into electrical energy, the remainder of it appears as heat in the cell. It is usually referred to as the heat of reaction and is equal to the electrical work done plus the heat evolved.

There are, however, cases in which the electrical work done exceeds the chemical energy spent. The heat evolved is then negative; that is, heat is absorbed. This, in fact, serves as means for converting some of the heat stored up in the cell materials into useful form. Their action may be compared to that of a cylinder of compressed air. If the air is allowed to flow out and operate an air motor, it cools in doing so and the work is done, partly at least, at the expense of surrounding heat.

The immediate effect of the inequality between heat of reaction and electrical work is that the cell either rises or falls in temperature during action. It will afterwards, of course, give out the excess or absorb the deficiency of heat from surrounding bodies. For reasoning about the energy changes, it is more convenient to suppose the action to take place slowly, so that the cell is always at the same or nearly the same temperature as its surroundings.

A very curious and interesting fact is observed when the discharge of a lead storage cell is carried to a state of exhaustion. The cell is apparently completely discharged; but if the circuit is left open several minutes, it has been ascertained that the cell recovers some of its energy, and that it can still furnish a certain quantity of electricity.

This peculiarity in the action of a storage cell is explained thus: The storage element, when it becomes active, discharges itself and at the same time polarizes, as all single-fluid liquid batteries do. This polarization attains in a certain time a force almost equal to the already weakened element, and the action ceases or is reduced to very little.

If the cell then be left to rest, it depolarizes, as do all single fluid batteries polarized by their own action. As soon as the cell is depolarized, it is again ready to furnish a current; but during this new discharge it again polarizes, and so on until no further current can be obtained.

What the Commissions Are Doing

Up-to-the-Minute News Regarding the Activities of State and Interstate Commissions, Courts and City Councils in Matters Concerning Telephone Companies—Summary of Commission Orders and Schedule of Telephone Hearings

Commission Fixes Valuation in Ohio Bell State-Wide Rate Case.

The Ohio Public Utilities Commission in a decision handed down on January 10 in the eight-year old Ohio Bell state-wide rate case fixed the value of the company's property at $104,282,735.

This decision is considered a victory for the Ohio Bell Telephone Co. although the company engineers had put in claims of a valuation as high as $145,000,000. No rate making was done on this valuation as 30 days will be permitted in which either side to the controversy can file exceptions. It is understood that both sides will file exceptions and thus the matter may be hung up for another long spell.

Attorney General Bettman is of the opinion that the valuation is too high by $20,000,000. Included in the valuation is an item of $3,592,040 as "going concern" valuation to which the state objected. The company had contended for a "going concern" valuation of $20,000,000.

The valuation fixed is of June 30, 1925, when the case officially arrived in the hands of the commission. It will require several months of calculation before rates can be fixed on this valuation, if the valuation is allowed to stand.

Hearing Completed on Plans of Indiana Commercial Company.

Commissioner Frank T. Singleton, of the Indiana Public Service Commission, has completed the hearing of evidence in the petition of the Indiana Commercial Telephone Co. of Elkhart, to combine into one operating company 27 Indiana telephone companies. Most of the properties were recently purchased from the Indiana Telephone Utilities Corp.

Protest against the proposed merger was made by representatives of the cities of LaPorte, Elkhart and Goshen. Chief objection was that the merger might be followed by a rate increase.

Service Connection Charges in Indiana Ordered Reduced.

A general order reducing the schedule of telephone company charges for installation and reinstallation of telephones was adopted by the Indiana Public Service Commission on January 6, affecting all telephone companies in the state. It was estimated by members of the commission that patrons would be saved $150,000 annually by the order.

All except the installation charge on business telephones of the larger telephone companies, having annual revenues of over $100,000, were reduced. This was left at $3.50, but the installation charge on residence telephones in larger cities was reduced from $3.50 to $2. The reinstallation charges, or changes in type or position of telephone, were reduced from $2 to $1.25.

The installation charge on business telephones for companies having less than $100,000 revenues annually was reduced to $2.50 and on residence telephones for the same class the charge was made $2. Reinstallation charges were reduced from $1.50 to $1.25.

For the smaller telephone companies having less than $10,000 revenues the business telephone installation charge was reduced to $2 and the residence charge to $1.50. In this class also the reinstallation charges were cut from $1.50 to $1.25.

Asks Big Judgment Against Illinois Bell in Chicago Case.

Judgment for nearly $20,000,000 against the Illinois Bell Telephone Co. was asked in a petition filed in the federal court in Chicago, January 8, by Attorneys Benjamin F. Goldstein and George I. Haight in behalf of Chicago telephone-users.

They also asked the immediate reduction of the telephone rates in an amount aggregating $2,000,000 a year in conformity with an order of the Illinois Commerce Commission entered in 1923, enforcement of which was stayed by an injunction of the United States District Court.

The petition, according to the lawyers, is in accordance with the unanimous opinion of the United States Supreme Court of December 1, 1930, in which new principles of law relating to public utility rates were laid down.

The $20,000,000 would be a refund of the excess of over $2,000,000 a year set aside by the company as a depreciation fund for the last eight years, with interest, it was explained.

New York Property Transfer to Bell Approved by I. C. C.

Following a hearing before the Interstate Commerce Commission, of Washington, D. C., a certificate was issued approving the acquisition by the Cayuga Southern Telephone Co., operating in the state of New York, of the properties of the McLean Telephone Co., of McLean, N. Y., in accordance with the terms of a contract.

The McLean company owns and operates a telephone system of about 110 stations in and about the village of McLean, in the townships of Groton and Dryden, Tompkins county, and in the township of Summerhill, Cayuga county, New York.

The Cayuga company, a subsidiary of the New York Telephone Co., owns and operates a telephone system of about 1,850 stations in the central-office districts of Aurora, Poplar Ridge, Sempronius, and Moravia, in Cayuga county, and Groton, in Tompkins county. The territory in which the McLean company operates is about five miles east and southeast of Groton, and is generally rural in character. The local system is connected with that of the Cayuga company, so that the McLean company's subscribers reach points on the Bell System. No duplication in plant or service is involved.

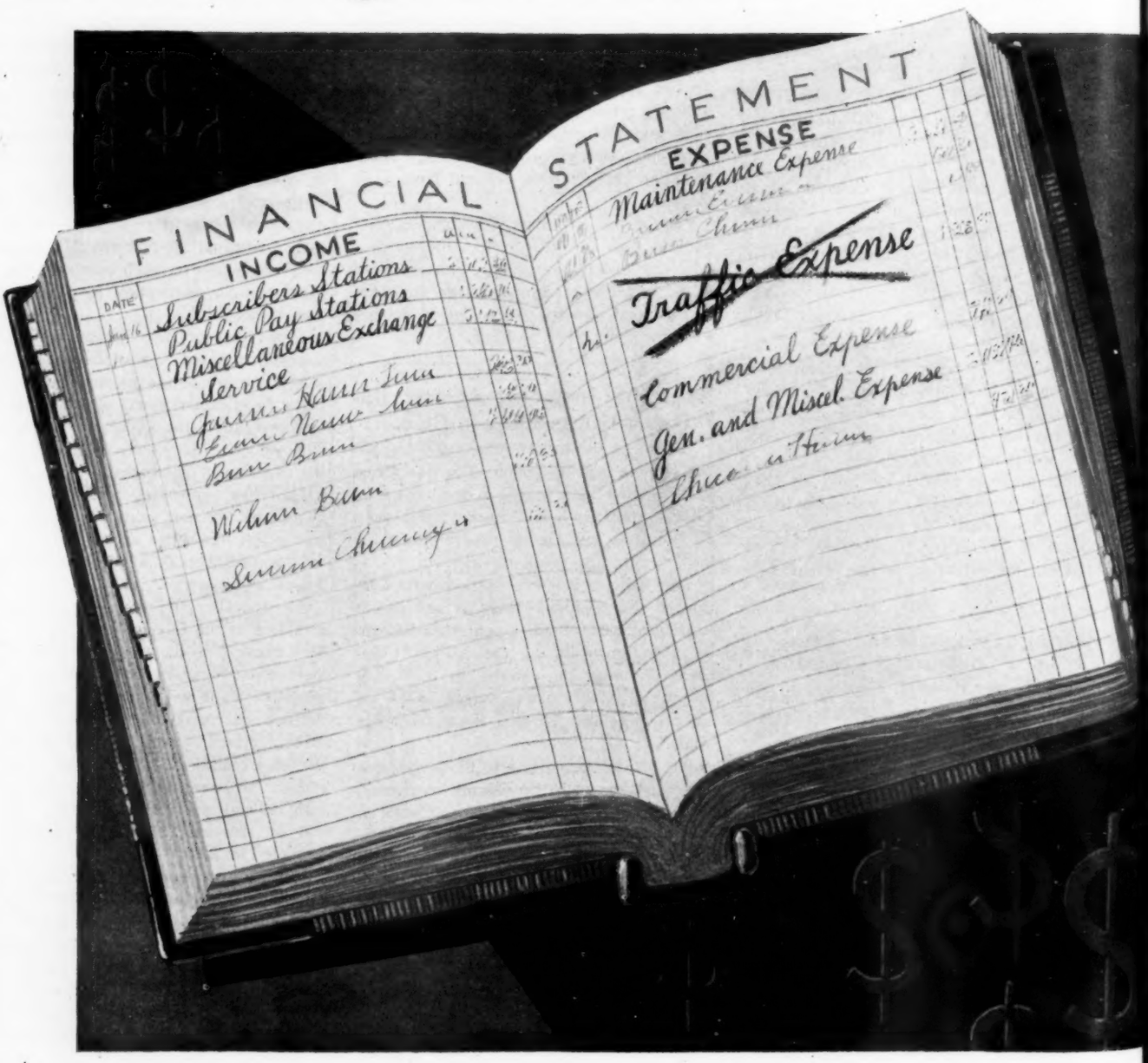
Under date of June 3, 1930, the McLean company granted to the Cayuga company, in writing, an option to purchase the former's fixed capital assets on or before September 1, 1930, for $3,000, payable in cash. The option was exercised and the time for settlement extended to January 1, 1931. The properties consist of an exchange at McLean, station apparatus, outside plant, and other accessories necessary for the operation of a telephone exchange, but no toll lines.

An appraisal of the properties by the president of the Cayuga company, who has been engaged in the telephone business for more than 40 years and is familiar with telephone plant and equipment values, finds the cost of reproduction new of the plant to be retained in service to be $7,929 and less depreciation, $2,308. The value of property to be retired is estimated at $1,580, with salvage amounting to $300, and the cost of removing the retired property is estimated at $310.

The McLean company has outstanding 45 shares of capital stock of $37 each, but no funded debt, and current indebtedness does not exceed $100. In 1929, revenues and expenses amounted to $2,624 and $2,458, respectively. The company was organized in 1908 by local interests.

The switchboard at McLean and most of the plant is more than 20 years old, with very little maintenance since the company was organized. Continuous service is not furnished, ranging from 14 hours on week days to only 2 hours on Sundays. It was testified that necessary additions and improvements to put the plant in first-class operating condition and continuous service would involve expenditures too large for the McLean company, and that the stockholders were not willing to increase their investment in the plant nor to incur additional expense.

The Largest Item of EXPE



STROWGER AUTOMATIC DIAL SYSTEMS

GENERAL EXPORT DISTRIBUTORS
The Automatic Electric Company, Ltd., Chicago

In Canada . . . Independent Sales and Engineering Co., Ltd., Vancouver
In Australasia . . . Automatic Telephones, Ltd., Sydney
In Japan . . . Automatic Telephones Ltd. of Japan, Tokyo

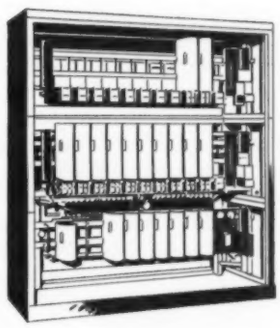
When writing to Automatic Electric Inc., please mention TELEPHONY.

E—wiped out FOREVER!

FOR many years, telephone companies have had difficulty in placing small exchange operation on a profitable basis. The increasing demands of telephone users in small communities for modern service—such as full twenty-four hour operation and more rapid and accurate response to calls—have made it more and more difficult to operate profitably. In some extreme cases, operation has been continued at a loss.

The use of Strowger Dial units, specially designed for small exchanges, eliminates the largest single item of expense in small exchange operation—local traffic expense. With dial operation, carrying charges are slightly increased, due to somewhat larger investment in equipment—but not so much but that a fair margin of income remains for profit. In fact, hundreds of small exchanges have, by adopting Strowger operation, placed their activities on a paying basis and assured themselves of profitable operation for years to come.

The newly developed Type 51 sectional units fit practically any floor plan, and are easily expansible section by section, either vertically or horizontally, as growth requires. They are entirely unattended, toll and information calls being handled over trunks by existing operating labor at the most convenient attended exchange. Further details are given in Bulletin 1551, a copy of which will gladly be sent upon request. Engineered, manufactured and installed by Automatic Electric Inc., Chicago, U. S. A.



A Type 51 Strowger Dial Unit Equipped for 50 Lines and Two Toll Trunks

Automatic Electric Inc.

Manufacturers of

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When writing to Automatic Electric Inc., please mention TELEPHONY.

Patrons are not satisfied with the present service. They particularly desire continuous service and to be connected with the Groton exchange of the Cayuga company in order that a 14-cent toll charge for calls between subscribers of the McLean and Groton exchanges may be eliminated. Rates will be somewhat higher after the proposed acquisition of properties is accomplished, but will conform to those filed with the New York Public Service Commission for situations similar to those existing in the McLean territory, and the local service area will be much larger.

Property Transfer and New Rates Approved in Minnesota.

The Minnesota Railroad & Warehouse Commission has granted the application of the Garfield Farmers & Merchants Telephone Co. and the Erdahl Telephone Co. for authority to consummate an agreement for the sale and transfer of all the physical assets of the Erdahl company to the Garfield Farmers & Merchants company and to place in effect a revised schedule of exchange rates.

The Garfield Farmers & Merchants company has its principal place of business at Waconia, Minn., and operates telephone exchanges at Garfield, Brandon and Evansville, serving the respective local areas and rural territory adjacent thereto. The Erdahl Telephone Co. is a cooperative farm line organization serving approximately 42 town and rural stations at Erdahl and in adjoining rural territory.

P. A. Glaeser, Leo C. Fischer and T. J. Fischer, as individual owners of all the physical assets of the Erdahl company, joined in the petition for sale and transfer of all its physical property to the Garfield Farmers & Merchants company which requested authority to serve the present subscribers of the Erdahl company on multi-party circuits extended from and connected to its Evansville exchange and for permission to discontinue the present switchboard at Erdahl.

A petition signed by 17 subscribers and patrons of the Erdahl company was presented in evidence at the hearing by O. G. Reine in protest to the proposed change in plan of operation and the rates for service as contained in the original application. The evidence disclosed the fact that the objection was entered in protest to the service now being received and incidentally to the increase in rate for metallic service.

Amendment was made to the original schedule of rates by the petitioner whereby rates would not be increased in cases where the subscriber elected to receive his service over grounded circuits. The amended application provides that subscribers heretofore served by the Erdahl company will receive 24-hour continuous exchange service, and the choice of receiving such service over grounded circuits at no increase in the net rate or to receive their service over metallic circuits at a rate of 25 cents net per month over the existing rate.

The present rates of the Erdahl company are $12 per year. The proposed monthly gross rates of the Garfield Farmers & Merchants company, upon completion of circuit arrangements required in order to effect the proposed plan of operation, are as follows:

Multi-party business, ground circuit, $2.00, metallic circuit, $2.50; multi-party residence, ground circuit, $1.50, metallic circuit, $1.75; multi-party rural residence, ground circuit, $1.50, metallic circuit, $1.75.

In approving the proposed rate schedule and the transfer of the specified property, the commission gave no consideration as to the value or price to be paid.

New Rates Effective Upon Installation of Dial Equipment.

The Commonwealth Telephone Co.'s application for higher rates at Shiocton, Wis., has been granted by the Wisconsin Railroad Commission. The rates involve only subscribers receiving automatic service.

At the hearing the company attempted to show that with the proposed increase in rates, it would still be earning less than a reasonable return upon the book value of its property. The company proposed to retire considerable property and make new additions in its plant and building.

Automatic service will be rendered to 140 subscribers from the Shiocton exchange, and 21 subscribers will continue to receive magneto service from the Hortonville exchange of the Wisconsin Telephone Co. The commission refused to allow the Commonwealth company to charge the customers of the Hortonville exchange the same rates for an inferior grade of service as is being charged the others for a better grade of service.

The new monthly net rates approved by the commission for subscribers receiving automatic service are as follows:

Business individual line, $3.50; business two-party, $3.00; business extension station, $1.00; residence individual, $2.50; residence two-party, $2.25; residence four-party, $2.00; residence extension, 75c. An additional charge of 25 cents per month is to be made for each additional mile or fraction thereof outside of the base rate area of Shiocton. The gross rates are 25 cents higher than the net.

The old rates which will remain in effect for subscribers not receiving automatic service are:

Business one-party, $3.00; business two-party, $2.75; business four-party, $2.50; business extension, 75 cents; residence one-party, wall type, $2.00; residence two-party, wall, $1.75; residence four-party, wall, $1.50; residence extension, 50 cents. Cost of rendering rural service is decided according to line mileage.

It was ordered by the commission that the change of rates shall not be put into effect until such time as the company shall have satisfactorily shown that the proposed expenditures have been made and that the proposed automatic service is being given.

Exchange Operating at a Loss; New Rates Authorized.

Recently, an order was issued by the Wisconsin Railroad Commission authorizing C. D'Aoust to discontinue the present rates and rules for service at his Three Lakes exchange and to substitute therefor, for service rendered on and after the first billing date after the date of the order, the rates, rules and regulations proposed in his application filed June 9, 1930.

The application stated that the petitioner is engaged in construction to make the service at Three Lakes automatic and that the present rates will not permit him to earn a reasonable rate of return.

From evidence presented at the hearing it appears that the Three Lakes exchange has in the past been operating at a loss and that the proposed rates will provide something less than a full allowance for depreciation and return; therefore, the commission decided that the rates are reasonable. The new rates are:

Business individual line, $3.50; business two-party, $3.00; business extension, $1.00; residence individual, $2.50; residence two-party, $2.25; residence four-party, $2.00; residence extension, 75c. Gross rates are 25 cents additional. Rural service outside of the base rate area boundary line is 25 cents extra per month for each additional mile or fraction thereof.

It was brought out in the testimony that, while the property is at present in the name of Mr. D'Aoust, the auditor of the Commonwealth Telephone Co., an application is pending with the commission for authority by the company to purchase this property.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

December 31: Order issued approving the acquisition by the Cayuga Southern Telephone Co., operating in the state of New York, of the properties of the McLean Telephone Co., of McLean, N. Y.

December 31: Order issued approving the acquisition by the New York Telephone Co. of the properties of the Pioneer Telephone Co., operating in Erie county, N. Y.

January 2: Order issued approving the acquisition by the New York Telephone Co. of the properties of the Easton & South Cambridge Telephone Co., operating in Washington county, N. Y.

January 14: Hearing in Washington, D. C., on application of the Chesapeake & Potomac Telephone Co. of Baltimore City, Md., for authority to acquire the properties of the Union Telephone Co. of White Hall, Baltimore county, Maryland. The amount in consideration for the purchase of this property is $4,400.

INDIANA.

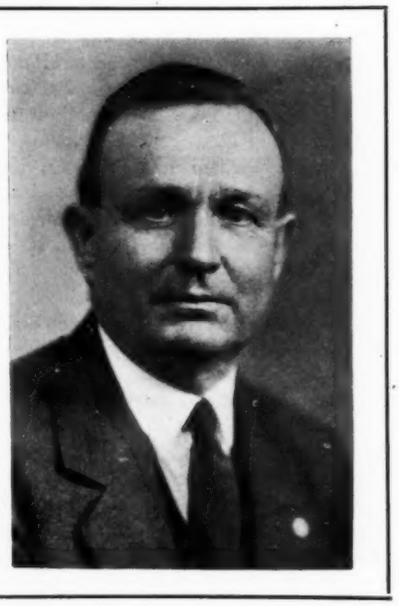
January 6: General order issued standardizing installation and service charges. Companies are grouped into three classes,

(*Please turn to page* 40.)

Personal Notes from the Field

Eugene D. Nims, of St. Louis, Mo., chairman of the Southwestern Bell Telephone Co., has been elected chairman of the board of the Missouri State Life Insurance Co. He succeeds James E. Caldwell, who resigned from the board, as did Rogers Caldwell, his son, both of Nashville, Tenn.

B. L. Fisher, newly-elected director of the United States Independent Telephone Association, is president and owner of the Lee Telephone Co., Rocky Mount, Va. He was born September 27, 1878, at Bonbrook,



B. L. Fisher, Who Was Elected a Director of the United States Independent Telephone Association Last Fall, Is President and Owner of the Lee Telephone Co., Rocky Mount, Va.

Va. After finishing grammar school, he taught in public schools for four years; he also ran a country store for some time.

Mr. Fisher became interested in the telephone business, took a telephone engineering course and in 1904, actively entered the field by becoming associated with the Franklin County Telephone Co., at Rocky Mount, Va. At that time, there were about 40 telephones. Under Mr. Fisher's management the company was extended, and in 1925, a new plant and company was established at Stuart, Va., under the name of the Stuart Telephone Co.

In 1926, another company was formed in North Carolina which was known as the Fisher Telephone Co. These companies were merged with the Franklin County company in 1928 into what is now known as the Lee Telephone Co. In September, 1930, the Lee Telephone Co. purchased the municipal telephone plant at Martinsville, Va., which had been operated by the city since 1908.

The Lee Telephone Co. now owns and operates all of the telephone property between Roanoke, Va., on the north, Winston-Salem, N. C., on the south, Danville, Va., on the east, and extends westward to the Blue Ridge Mountains. The Lee company also operates all of the toll lines in this territory.

Mr. Fisher is a member of the United States Independent Telephone Association and the Independent Pioneer Telephone Association of the United States.

Walter S. Gifford, president of the American Telephone & Telegraph Co., is featured in an article in "Forbes Magazine" of January 15 under the heading, "Guides Largest Enterprise in the World." This is the first of two installments of an article written by B. C. Forbes, which tells in a most interesting human way of the highlights of Mr. Gifford's climb to the presidency of the Bell System, starting without money or influence in 1904.

Telephone people generally will be interested in this latest presentation of the qualities and characteristics of the Bell System's chief executive which enabled him to attain the leadership of the world's greatest business organization.

W. E. Bell, commercial superintendent of the Lincoln Telephone & Telegraph Co., Lincoln, Neb., rounded out 28 years of service in the industry on December 1 last. With his brother, the late J. M. Bell, he became interested in the organization of a company to serve the citizens of York, Neb., and vicinity; and from the banking business, he was drafted to become secretary and later general manager of the York County Telephone Co.

Later a toll company was organized, and several exchanges in the county purchased from local owners. In 1912 the York County company was incorporated in the system of the Lincoln Telephone & Telegraph Co., under plans laid by Frank H. Woods and his associates, which eventuated in the taking over of a number of other exchanges and the extension of the company activities over the 22 counties in southern and southeastern Nebraska that it serves now.

Mr. Bell remained at York as district manager until the following year, when he was transferred to Lincoln to become district commercial manager. When the late R. E. Mattison was moved up to the general manager's position in 1921, Mr. Bell became commercial superintendent, a position he has filled with ability.

His pleasing personality and his thorough knowledge of the business and of the needs of the territory served by the company has made him a highly-valued officer. His son, Donald G. Bell, is manager of the Lincoln office. Mr. Bell has been prominent in telephone association work, besides being a member of the Telephone Pioneers of America. He helped organize the Nebraska Telephone Association, has twice been its president, has long been a director and is always drafted for the position of its treasurer.

Mr. and Mrs. A. G. Israelson have just completed 24 years of service as managers of the Saronville, Neb., exchange of the Lincoln Telephone & Telegraph Co., an unusual record for combination work of this character. In that time the number of patrons rose from 74 to 212, in a strictly farming community. Practically every home in the village and the rural area surrounding it have telephones. It is a prosperous community made up largely of Swedish people.

Marion J. Stoker, who has been general commercial engineer for the Southwestern Bell Telephone Co. at St. Louis, Mo., has been appointed assistant general manager for the Oklahoma area, effective December 1. He reported to R. J. Benzel, general manager.

Mr. Stoker has been with the Southwestern Bell company for six years, starting as general development engineer at St. Louis in September, 1924. Previously he was with the Northwestern Bell Telephone Co. at Omaha, Neb., for eight years. He successively became division commercial superintendent for the Southwestern Bell company at Kansas City, Mo., and Dallas, Texas, being appointed commercial engineer in October, 1929.

Bancroft Gherardi, of New York, vice-president and chief engineer of the American Telephone & Telegraph Co., has been elected to the presidency of the American Standards Association. Mr. Gherardi, who has been a member of the association's board of directors, will assume the direction of the national and international standardization activities of the organization, a task in which over 2,000 representatives of about 500 national trade, technical, and governmental bodies are engaged under American Standards Association auspices.

Mr. Gherardi has been affiliated with the American Telephone & Telegraph Co. since 1907, and has been vice-president and chief engineer since 1920. He is past president of the American Institute of Electrical Engineers, and has also served as president of the United Engineering Society.

L. E. Winget, formerly assistant general manager of the United Telephone Co., Chicago, became connected with the Associated Telephone Utilities Co. in August, 1930, at which time he was ap-

pointed traffic superintendent of four operating companies having their general officers at Lubbock, Texas. These companies are the State Telephone Co. of Texas, Standard Telephone Co. of Texas, Haskell Telephone Co. and the Kansas State Telephone Co.

In the fall of 1899 Mr. Winget started in the telephone business at Charleston, W. Va., with the Southern Bell Telephone & Telegraph Co. as chief clerk and assistant to the superintendent of the state. He was transferred to the Atlanta, Ga., general offices as toll service inspector and was later chief toll service inspector, handling toll circuit layouts, and toll swtichboard requirements.

L. E. Winget, Now Traffic Superintendent of Four Operating Companies of the Associated Telephone Utilities Co. with Headquarters at Lubbock, Texas, Has Been Connected with the Industry Since 1899.

With the installation of the functional organization of the Southern Bell company, Mr. Winget was appointed superintendent of traffic for the Savannah division, comprising southern Georgia, eastern South Carolina and the state of Florida, with headquarters at Savannah, Ga.

He was transferred to the American Telephone & Telegraph Co., and worked under the supervision of Thomas B. Doolittle, where he engineered toll circuit layouts, and toll switchboard requirements, working with the associated Bell companies out of the Boston, Mass., office. He was later transferred to New York.

Mr. Winget was next appointed division superintendent of traffic for the Northwestern Bell Telephone Co. in Minnesota, North Dakota, and South Dakota, with headquarters at Minneapolis. He was later transferred to the Southern Bell Telephone & Telegraph Co., at Louisville, Ky., as superintendent of traffic for Kentucky, southern Indiana and southern Illinois.

As division traffic engineer for the Pacific Telephone & Telegraph Co., Mr. Winget was one of the three engineers in charge of the Seattle cut-over to panel machine switching equipment. He was general superintendent of traffic in the telephone department of Brazilian Light, Power & Traction Company, Rio de Janeiro and Sao Paula, Brazil.

For two and a half years prior to going with the United Telephone Co., Mr. Winget was general traffic manager of the International Telephone & Telegraph Corp., for Spain, with headquarters in Madrid. He went through the period of installing the toll line plant for Spain, and the conversion of thousands of lines from magneto and common battery service, to automatic service.

In addition to his other duties as superintendent of traffic, he is now conducting the employe sales campaign for the State Telephone Co. of Texas.

Obituary.

John F. Vaughan, age 56, of Lutz, Fla., superintendent of toll lines of the Peninsular Telephone Co., Tampa, Fla., died at his home on January 6. He had been ill only a short time.

Mr. Vaughan, born in Selma, Ala., September 17, 1874, was the oldest employe of the Peninsular company, being the first man employed by President W. G. Brorein, when the company was organized in 1901. He went to Tampa in 1895 and was superintendent of the city fire alarm system from 1899 to 1901. Before going to Tampa he worked for the Southern Bell Telephone & Telegraph Co. in Alabama, starting with it in Pensacola, Fla., in 1892.

He was general superintendent of the Peninsular company from 1904 to 1927 and superintendent of toll lines from 1927 to the time of his death. He was a member of the Independent Pioneer Telephone Association of the U. S. and of the Telephone Pioneers of America.

One of his sons, Louis Vaughan, went to his death aboard the U. S. S. Tampa which was sunk in Bristol channel in September, 1918. The Sulphur Springs American Legion post is named for him.

Survivors are the widow, Mrs. Ellen Vaughan; two sons, John F., Jr., and Thomas Lacey Vaughan; a daughter, Mrs. H. R. Baker, and a brother, W. T. Vaughan, now living in Oakland, Calif.

The business offices of the Peninsular company were closed on the afternoon of January 8 between 3 and 4 o'clock during the funeral services.

Mr. Vaughan was treasurer and a past master of the John Darling lodge of A. F. & A. M., which was in charge of the funeral services.

G. V. Ross, public office manager, of the Southwestern Bell Telephone Co., Kansas City, Mo., died November 29, following an operation. Mr. Ross had a service record of 31 years with the Southwestern Bell company, and had made many friendships in Kansas City and in St. Louis where he was formerly located.

Mr. Ross became associated wtih the old Missouri & Kansas Telephone Co. in October, 1899, and served as license agent until May, 1910. He was transferred to the Bell Telephone Co. of Missouri in 1910, and was a special agent until 1911, when he went with the Missouri & Kansas company again, until 1913.

From 1913 until 1915, Mr. Ross was connecting company agent for the Missouri & Kansas company. In 1917, he entered the service of the Southwestern Bell company at St. Louis, as connecting company agent. In December, 1926, he was made a district manager at Kansas City, and in July, 1929, he became public office manager there, which position he held until his death.

Mr. Ross was an active member of the Gleed Chapter of the Telephone Pioneers in Kansas City, and in 1929, he was a delegate to the convention held in Minneapolis.

Jesse E. Flint, general manager of the United Telephone Co., Abilene, Kans., died in Kansas City, Mo., December 15, 1930, at the age of 51 years. His early boyhood was spent in Minneapolis, Kans., where his father established the telephone exchange in 1899.

After graduating from St. John's Military school at Salina, Mr. Flint made the telephone business his life work. In 1902, he became owner and operator of the Minneapolis Telephone Co., of Minneapolis, Kans.

Following purchase of the Minneapolis exchange by the United Telephone Co. in 1911, he continued in the capacity of manager of this and surrounding exchanges until his promotion to the general office in Abilene in 1922.

With the formation of the United Telephone & Electric Co., in 1926. Mr. Flint was made general superintendent of that company's Kansas and Missouri properties. Early in 1929, he moved to Kansas City as a more central location among the company's Missouri and eastern Kansas properties. Mr. Flint was a Scottish Rite Mason and a member of the Telephone Pioneers of America.

Fay Harry Ovitt, aged 49 years, of Enosburg Falls, Vt., died at his home January 2, of pneumonia. His daughter, Charlotte, 14 years of age, preceded him by 24 hours.

Mr. Ovitt became interested with his father, C. L. Ovitt, in the telephone business in 1901, and at the time of his death was superintendent of the Northern Telephone Co. of this town, and general manager of the Central Telephone Co. of Essex, Vt.

He was a member of the Telephone Pioneers of America and the Independent Pioneer Telephone Association of the United States. He was also a member of Lincoln Lodge, A. F. & A. M. and Lafayette Chapter, R. A. M.

Construction Plans of Bell for 1931

Bell Companies Throughout the Country Are Planning Extensive Construction Budgets for Improvements in Plants and Buildings—Expenditures Will Include Considerable Underground Cable Construction for Toll Purposes

A. T. & T. Co.'s New Long Distance Board in New York.

A large, new long distance switchboard for the American Telephone & Telegraph Co. will soon be installed in the New York Telephone Co.'s building at 24 Walker street, New York City. This switchboard, consisting of more than 370 operators' positions, will serve all traffic between New York City and New York state, New Jersey and Canadian points, and will greatly augment the existing facilities of the New York long distance central office.

More than 1,000 direct circuits will extend from this new board to points in New York state, at the time it is placed in service, about July, 1931. Approximately 300 additional direct circuits from points in New Jersey and Canada will be transferred to the new unit in the latter part of that year.

The board itself will be completely new, embodying improvements in design which will facilitate the handling of long distance service on the "non-hang-up" basis, the calling subscriber remaining at his telephone while the connection is made. On the average, about 38,000 calls originating daily in New York City, pass through the long distance central office. Hundreds of thousands of calls to intermediate long distance points and to suburban communities are also handled daily at other switchboards in this building.

Bell of Canada Announces Its 1931 Construction Budget Plans.

C. F. Sise, president and chairman of Bell Telephone Co. of Canada, stated recently that in 1931 the company will spend $20,000,000 on plant replacements, renewals and extensions. Mr. Sise pointed out that, during the past five years, a period of great expansion in business, the company has spent in the aggregate over $116,000,000 in plant extensions and improvements, or an average of a little over $23,000,000 a year.

During 1930, he says, when the general business depression might have led the company to defer much work that had been planned, the company went ahead with its expansion program and spent even more than in preceding years.

Among the projects contemplated for 1931 are several new dial offices in Montreal and completion of the new toll headquarters buildings, adjoining the company's head office building in Montreal.

Although the business depression resulted in an abnormally large number of telephone service cancellations in the company's territory last year, the company was active in its sales efforts and made a new high record in number of new installations. Thus there was a slight increase in net telephone installations.

Toll business also was ahead of the previous banner year, 1929. The company, with its improved long distance facilities, concentrated on improvement in its toll revenues, with satisfactory results.

In 1929 the company launched a five-year program of new construction, the total cost to be $126,000,000. During 1929 a gross of $30,529,000 were spent on property improvements, and the figure for 1930 was originally set at $31,500,000. Due to the business recession, the 1930 total was pared down to between $27,000,000 and $28,000,000, certain projects not immediately required being postponed temporarily.

Dallas-Oklahoma City Telephone Cable Is Under Construction.

Construction of a $3,000,000 underground long distance telephone cable to connect Oklahoma City, Okla., and Dallas, Texas, is now under way, according to R. J. Benzel, general manager, Southwestern Bell Telephone Co. in Oklahoma.

Work on the Oklahoma part of the project began December 15. The section was started at the Red River about 15 miles south of Durant. About 150 men are employed. The cable will extend from Dallas to Holdenville where it will meet underground cables which already connect Tulsa, Oklahoma City and Holdenville.

The new underground cable will guard telephone patrons against interruptions of service by fire, storm or flood. The project will include construction of a building for repeater equipment at Wapanucka, Okla., valued at $220,000. Other repeaters are to be installed at Holdenville, Oklahoma City, Shawnee, Stroud, and Tulsa.

This cable is part of a $50,000,000 underground cable construction program, which will be carried out by the Southwestern Bell Telephone Co. in the Southwest within the next five years. Five million dollars of this amount are to be expended in Oklahoma.

A. T. & T. to Place Parts of Nebraska Lines Underground.

The American Telephone & Telegraph Co. announces that it will expend large sums during 1931 in placing its transcontinental and other long lines in parts of Nebraska underground.

One long stretch between Gothenburg and Big Springs, where during the last three years lines have been repeatedly blown down, is on the list. The last time the line went down was in November, and the company figures it will be cheaper and at the same time insure a much-desired continuity of service with this underground.

Michigan Bell Plans New Plant Expenditures of $22,000,000.

The Michigan Bell Telephone Co. has planned for 1931 an expenditure of approximately $22,000,000 for new construction, Burch Foraker, president of the company, has announced. This work has been engineered on the basis that business and industrial conditions will improve as the year 1931 advances. The expansion program calls for work in many sections of Michigan.

The contemplated expenditure will be made from new capital, entirely for new plant and equipment, Mr. Foraker said, and he expects the program will be followed unless conditions unforeseen arise.

In addition to the construction expenditures for new telephone plant planned for 1931, there will be spent approximately $22,689,000 for maintenance and operation of the company's service in Michigan, making total expected expenditures of approximately $44,689,000.

The telephone program engineered for the year includes the completion of new buildings at various points, construction of additional long distance lines and cable, and installation of considerable dial central office apparatus and other exchange equipment, for purpose of extending facilities and further improving the present high grade of service.

Building construction planned for 1931 will cost, including sites, $1,000,000, and new central office and subscriber's telephone equipment will cost $14,400,000. New exchange plant expenditures planned will total $6,140,000, including $1,125,000 for pole lines, $1,592,000 for aerial cable, $1,052,000 for aerial wire, $685,000 for underground conduit and $1,686,000 for underground and aerial cable.

Long distance telephone plant construction projects contemplated total $1,000,000, including $300,000 for additional circuits in stormproof cable.

Material requirements for the year under this program will include 44,000 poles, 500,000 pounds of bare copper wire, 3,400,000 feet of wire strand, 1,117,000 duct feet of clay conduit, 25,500 crossarms, and 1,561,000,000 conductor feet of wire in cable.

The Michigan Bell company now has 678,000 telephones in service, of which 292,000, or 42.75 per cent, are dial operated. A net gain of 25,000 in the number of telephones in service is anticipated during the next 12 months.

Northwestern Bell to Spend in Excess of Five-Year Average.

The Northwestern Bell Telephone Co.'s 1931 budget for gross expenditures is $15,625,000, compared to an average of $11,724,000 for the past five years, it has been announced at the headquarters of the company in Omaha, Neb.

Of the total 1931 outlay, the Nebraska-South Dakota area will receive $4,226,000 for new plant and equipment expenditures, compared to a five-year average of $2,815,000.

The money will be spent for a variety of activities in the program, such as additions to switchboards, more telephones for subscribers, new buildings, more local and long distance equipment and other facilities to keep pace with the growing demand for, and increasing use of, telephone service.

New England Bell Has Large 1931 Construction Budget.

During the year 1931, the New England Telephone & Telegraph Co. plans to spend $27,000,000 in construction for the extension and betterment of telephone service—about $600,000 more than the average annual construction budget for the past five years.

A material percentage of this construction budget will go to contracts for building and conduit construction, although the greater part of it will be applied to telephone payrolls and supplies, and thus help to keep busy the army of telephone workers in New England.

President Jones says that while the telephone company's business reflected, in reduced toll revenues and a smaller net gain in subscribers, the economic conditions prevailing in 1930, the directors and officers have decided to regard the existing depression as a variation from normal which ought not to control their decisions as to plans for the extension and improvement of telephone service.

The largest building construction project under consideration by the telephone company, at this time, is the proposed supply center at Watertown. Plans for this building are practically completed and have been put out for bids. If bids are satisfactory, this job will go forward at once.

A new central office building for Framingham has just been started and will be completed in the summer of 1931. Plans for a new building at Lynn are in process, and when completed bids will be asked. In Providence the work of razing old buildings on the site of the proposed new Broad exchange already has started. Work on the building itself will start when plans are completed.

Holyoke and Sharon in Massachusetts and Newport in New Hampshire are also scheduled for new central office buildings to be started during the year 1931; and additions to buildings are being planned for Winchester, Mass., and East Providence, R. I.

The program for 1931 also calls for the construction of several important toll cable projects, among which are extension of cable from Bristol to Newport, R. I., an additional cable from Boston to Providence, R. I., the continuation of a Boston to Fitchburg cable started late last year, the starting of a new cable from Greenfield, Mass., to White River Junction, Vt., and the continuation of work on the Boston to Worcester and Boston to Bangor cables.

The last link in the Boston to Bangor cable from Clinton, Me., to Bangor, Me., will be completed this spring. It will be connected into the new Bangor central office, which will be ready for service this summer. With this new cable in operation the state of Maine will have exceptional facilities for providing fast telephone service, not only within its borders, but to all parts of the country.

The telephone company's budget also provides for additional equipment in a large number of its present central offices.

Development Program of Northwestern Bell Company in Iowa.

The Northwestern Bell Telephone Co. has adopted a budget calling for expenditures in Iowa during 1931 of $4,500,000. The program includes a development program equivalent to the experience of the average year for the last five years, but is somewhat less than during the last three years, due to fact that in that period expenses included the transformation of the Des Moines exchange into a dial service system and also the construction of a long distance cable across the state from Davenport to Council Bluffs and on into Omaha in order to get rid of storm and other interference troubles.

The expenditures for 1931 will be fairly well distributed over the state. Among the more important projects are the completions of improvement and replacement programs started during the current year at Burlington, Davenport, Cedar Rapids, Decorah and Shenandoah. The completion of the cross-state cable is also included, and in addition there will be a branch cable from the repeater station at Lewis to Atlantic. At Shenandoah, the company is building a new central office and putting in complete new equipment.

"The telephone increase as compared with the population increase in Iowa," says H. G. Conger, general manager for that state, "gives indication of the rapid growth that has made necessary the extension and improvement program. During the last ten years the population has increased 2.8 per cent, while the net increase in the number of Bell System telephones was 34 per cent.

"Iowa ranks first in the nation in the number of farms with telephones, first in residence telephones in comparison with population, and fourth in total number of stations according to population. In Iowa, there are 23 telephones per 100 population: one residence telephone per 5.3 persons, and 66 per cent of all farms have telephones.

Pennsylvania Bell Announces Large 1931 Construction Budget.

Nearly $35,000,000 are scheduled for disbursement in a state-wide construction program to meet Pennsylvania's telephone requirements this year, President Leonard H. Kinnard of the Bell Telephone Co. of Pa. has announced.

That the Bell company does not intend to mark time in its plant expansion and service betterment program is evidenced by the fact that this sum exceeds by nearly $5,000,000 the average annual expenditure for new construction during the five-year period from 1926 to 1930, inclusive.

Present plans set forth in the company's budget for 1931, Mr. Kinnard announced, will disburse nearly $11,000,000 for plant expansion and service betterment in Philadelphia, with the remainder of the $35,000,000 to be expended in meeting state-wide construction requirements.

Behind this substantial increase in appropriations for extension of the company's facilities is the fact that its survey engineers, whose major function is to gauge future business and population trends, predict a marked increase in the number of new subscribers in 1931, as compared with 1930. Despite current conditions, they predict that the 1931 gain will be approximately 160 per cent greater than the total for 1930.

"Not only does our 1931 budget exceed by nearly $5,000,000 our average annual outlay for new construction during the five-year period ending December 31, but our plans call for a $196,000,000 telephone expansion program during the next five years," said President Kinnard.

Wisconsin Telephone Co. Plans $10,000,000 for 1931 Expansion.

The Wisconsin Telephone Co. in 1931 will spend $10,000,000 for new plant and equipment, according to preliminary plans just announced by President W. R. McGovern. These expenditures are part of an appropriation of $56,000,000 announced a year ago for construction in the five-year 1930-1934, inclusive.

The company is operating 368,700 telephones, a gain of 10,000 since the beginning of the year. Companies interconnected with the Wisconsin company bring the total number of telephones in the state to 570,900.

Follow the Blueprint; It's Valuable

Trouble in Piece of Equipment Usually Found in Some Small Thing and Not a Serious Complication—Value to Plant Man of Ability to Read and Follow the Blueprints—Some Instances Given Where Circuit Knowledge Proved-In

By Ernest Wommack,

Plant Superintendent, De Queen Telephone Exchange, De Queen, Ark.

A brilliant lawyer once walked into the plant room of a telephone exchange consisting of several thousand lines, and upon looking over the great number of relays, wires and other equipment said: "Great Scott, that is a lot of stuff; it must take a great mind to tell where all those wires and things go and to know what they do."

The man in charge walked over and, pointing out the equipment of one subscriber, asked: "Do you think it would be so hard to look after this much equipment?"

The answer was in the negative.

"Well," said the telephone man, "this is just one unit of several thousand that are alike in every respect, and these units all go together to comprise this impressive mass. We always keep in mind that we are working on small separate units."

A friend of mine, who is a competent telephone engineer, recently made this statement: "Whenever you encounter a case of trouble on a piece of equipment, first examine the simple things. Almost invariably you will find some small thing wrong and not a serious complication."

I think these statements will stand the test of any broad experience.

In the telephone field we work with units. We should do a thing well, if it is the only thing we accomplish in a whole day because when a job is not well done it is sure to back-fire and give plenty of grief later.

When on a job, we should complete that job before attempting another, for nothing is more disconcerting than to be jumping from one case of switchboard or relay trouble to another, or any other trouble for that matter. The result is that none of the jobs is done well, as a rule.

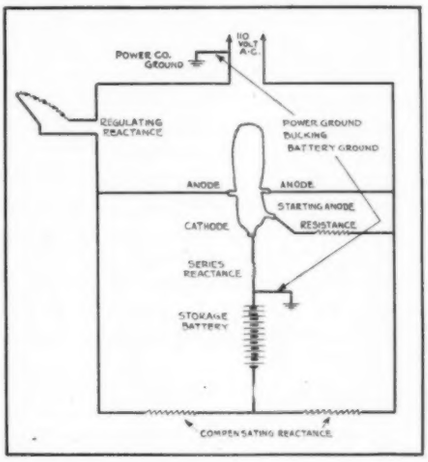
Today more people are getting into the telephone game that are really fit for the work than ever before. The day of misplaced talent is fast passing. To a great extent this is due to intelligent selection on the part of telephone companies.

Recently in conversing with a Bell man whose duty, along with others, is to select men to do telephone work, I asked this question: "What facts do you take into consideration in selecting a man for plant and line work?"

"First," he said, "we determine whether the applicant is mechanically, as well as electrically, inclined. Then we ascertain whether he finds it necessary to earn his living, or whether he merely wants to work as a pastime. We prefer the fellow who must work. Then, too, size has a great deal to do with it. A great big, brawny fellow will not make a good equipment man; experience has taught us that.

"We are getting a great deal of our talent from high school graduates, because we find among them more pliable minds with which to work, and they are quick to catch the proper knack of doing things."

"What are you doing," I queried, "with



Circuit Diagram of Rectifier Showing How Two Grounds Operated to Cause Trouble in Charging Storage Batteries.

the fellow of the old school; the older fellow who is still with you? Are you supplanting him with the youngster?"

"We are not," he replied, "because there are things that the old-timers do well. Many of them have a vast knowledge and experience that make them very valuable, and none of their positions is being jeopardized."

Those of us who are in the plant department should be more familiar with the blueprint, and we should always use it when in doubt. At first thought this statement might seem a bit amateurish to some, while to others it might seem that we are stating an accepted fact.

It may be true in large companies, where there is the most rigid supervision of plant men, that the blueprint is generally used when found necessary, but from our experience and observation in the small plant, we find that the tinkerer and the half-baked telephone man has done his bit with the plant equipment. The result is a much depressed owner who wonders why profits are not greater. (We have been informed that there are no profits in a public utility.) It isn't always the workman's fault; it may be due to improper training.

This is neither the rule nor the exception, but it does exist, because we have seen it. We make the statement because we are connected with the small plant, and we have seen the results obtained by the seemingly ignorant but nevertheless completely-satisfied workman.

Some plant men never follow a blueprint, but just hope to find the trouble, often causing two cases of trouble while "stabbing" at one. The question is: How can we expect to clear the trouble on a circuit when we don't know the normal conditions and functions? Do not memorize a print, nor bury your nose in a blueprint. It is not wise to memorize a print because there are too many possible circuits based on a few fundamental principles.

Fortunately much good instructive material has been placed before us through the medium of TELEPHONY and books; and there are few, if any, of us who are not familiar with enough symbols to enable us to intelligently follow a diagram. Such has not always been common knowledge to all of us.

I would not care to appear monotonous by referring too often to prints, but we are particularly impressed by the fact that a working knowledge with blueprints is necessary before a great amount of haphazard work can be overcome. We have in mind a case of negligence and carelessness that eventually proved costly and troublesome. It will do very well as an illustration.

A certain company, a small company, used a mercury arc rectifier for battery-charging purposes. The rectifier at some time or other had developed trouble and it was necessary to pull out several coils, and consequently a number of connections were loosened—some 25 or 30.

When the fault had been discovered and repaired, an attempt was made to replace the connections in their proper places. After being hooked up, the rectifier worked after a fashion, but in such a fashion that it should have been entirely unsatisfactory to the repairman. Apparently he must have been very relieved when it performed at all. To say the least, it took a near-acrobat to get the rectifier going because it was necessary to hold the circuit-breaker with great tenacity when the starting switch was thrown, else the circuit-breaker would invariably kick off.

The voltmeter on the panel board would always run up to some 45 or 50 volts,

although it was apparent that the battery was not taking any 45 volts. Finally the battery played out and had to be replaced. This was due, it seemed, to insufficient and inefficient charging. The cells had lasted only some four years and a few months.

After this happened it seemed that something should be done about the rectifier. Writing the manufacturer, it was found upon comparison that several connections were not in their proper places. These points were remedied, and yet there was trouble. On further investigation it was found that there was a large reactance coil in the circuit between the rectifier and the battery that was not called for in the diagram. However, when it was taken out of the circuit it was found that the rectifier arc would not hold at all. While the ammeter showed an output of some 20 amperes, it was found on actual test that less than three amperes were going to the battery.

In spite of all this, the rectifier seemed to be all right in every respect. As a last resort, and upon advice, the current supplied by the power company was analyzed, and it was found that one side of the line was grounded, that being a safety measure employed by the power company.

By installing an insulating transformer between the power line and the rectifier, all remaining trouble was eliminated. The trouble was that with this ground on one side of the line, after the alternating current had been rectified and sent to the battery, the current would meet the ground on the positive side of the battery and the two grounds would buck each other. After the transformer was installed, everything was rosy.

The point we wish to bring out is that the fellow who first repaired the rectifier hoped that he would get everything back in its original place, but having no print with which to check the circuit, it had to be pure guesswork. That guesswork proved to be expensive and a great source of annoyance.

Where is the company that has been operating for a number of years which has not had, at some time or other, a number of telephones that ceased to line up with the requirements of this new era of long distance communication? In all probability these deficient telephones were placed in the junkroom, junked or sold for a song.

A telephone in the storeroom is not producing revenue, and we should put it to work if possible. For instance, if we find some telephones in service, or in the storeroom, using the old type impedance coils that were all right for past needs where 40 miles was considered a long distance to talk, but are not suitable for present conditions, we can rework them at a small cost.

It is possible to write the manufacturers of the respective makes of telephones and obtain circuits of the latest type telephones on the market; the manufacturers are glad to oblige. We can then order the proper type induction coil, rewire the instrument and have an up-to-date telephone, capable of meeting the now rigid requirements.

Our company had on hand a number of telephones of a well-known manufacturer, the instruments being equipped with impedance coils, intricate hook-up and five-contact hook switches, and they were not delivering. We wrote the manufacturer for circuits used in his latest telephones and he sent prints immediately.

The wiring of the telephones was torn out and the instruments were then rewired booster circuit, with the use of a small reliable induction coil. Only three of the original five hookswitch contacts were needed, thereby eliminating two-fifths of the chances for contact trouble.

This article is written with the desire to help the small companies, like ours, that want to keep their equipment in service as long as possible and consistent with good service. Many small companies have a small working capital and, as a consequence, are reluctant to junk material that might give further service. However, we believe that the larger companies also want to keep their equipment in service as long as it is profitable to do so. We have in mind the superintendent of a large company who recently wrote desiring to know how we successfully refinished old telephones giving them a new appearance at a very low cost.

We have rainy days everywhere, and it seems that when the men cannot get outside to do their work, it would be profitable to put them to work rewiring a few telephones that are on the sick list; that is, if the telephones are obsolete, so to speak.

In closing, there are two points which we consider cannot be stressed too strongly, and they apply to equipment men. First, we should always have a good, shaded light on the object we are repairing or inspecting; and second, when doing a soldering job, we should do our work neatly—and by all means avoid the fatal "rosin joint."

Dismantling of Oldest Telephone Repeater Station in Oklahoma.

By Ray Blain.

I noticed with interest a news item in Telephony of January 3 regarding the removal of the oldest telephone repeater station in Oklahoma. As wire chief at Elk City, Okla., I was one of the first men to maintain this repeater. In fact, I believe this was one of the first repeater stations in the United States, for very few had been installed previous to that time.

After this installation had been completed, the plant room at Elk City not only held the record of being the first one to contain a repeater installation but was also the most crowded. A Mr. Hall came from St. Louis to put the repeaters in service, and a Mr. Jennings, I believe, used to come occasionally from Oklahoma City to check them up.

These repeaters were in use almost constantly and caused very little trouble except for replacement of dry cell batteries. Flashlight cells were used on the grid and No. 6 dry cells on the plate. The filaments were lit from the 24-volt exchange battery through a suitable resistance. I used to have great sport explaining to people how the different voltages tangled up inside the tubes.

Every Sunday morning I made tests and checked the gain with Woodward on the north, Altus on the south, Amarillo on the west and Oklahoma City on the east. It was indeed interesting to get the two distant operators on the line, start them talking to each other, then push the gain key to the limit and note how much closer together it brought the operators.

A lot of water has flowed under the bridge since I used to maintain repeaters in that crowded terminal room in Elk City. Just the same, I had a good time there and I am glad they have a new telephone exchange.

Minnesota University Has Five-Position Exchange Switchboard.

The University of Minnesota has a five-position private branch telephone exchange to handle its own telephone calls. This exchange has approximately 650 telephones connecting the various buildings, offices and departments of the university, and is connected with one of the Minneapolis central offices by 32 trunks.

It handles, during term time, an average of 2,100 incoming and 2,700 outgoing calls per day, in addiiton to approximately 1,800 calls between the various offices and buildings of the university. During the college year, seven operators are required to handle these calls.

Telephone Service on Canadian Railroad Trains Successful.

It is reported that the two-way commercial telephone service inaugurated on April 28, now used on the passenger trains of the Canadian National Railways between Montreal and Toronto, Can., a run of about 335 miles, is proving successful, according to a report from U. S. Vice Consul Alan N. Steyne, Montreal.

It is stated that the number of calls handled varies considerably from day to day. On some occasions a train has handled as high as 31 calls on a single trip, while the total number of calls for the first five months of operation was 791.

During the first six weeks of operation about 60 per cent of the messages handled were "curiosity" calls, and 20 per cent business conversations. The latter now constitute about 65 per cent of the volume, social calls about 25 per cent, while the curiosity messages have been reduced to 10 per cent.

New Treatment for Preserving Poles

Extensive Research Work Carried on for Purpose of Developing New Wood Preservative; Zinc Meta Arsenite (ZMA) Found to Be Most Practical—Address Before Annual Convention of the Illinois Telephone Association

By F. S. Shinn,
Western Manager, Curtain-Howe Corp., Chicago

For many years the users of telephone and telegraph poles have been confronted with the problem of protecting their poles against decay and insect attack. Millions of dollars are spent annually in pole-line construction. Most of this expense represents simply the cost of replacing decay. Evidently any substantial reduction in the rate of decay will result in a large reduction of annual expenditures.

Quite a few years ago the Western Union Telegraph Co. turned its attention to the elimination of the economic waste resulting from premature decay. In its maintenance and construction program, which covers considerably more than 200,000 miles of pole lines, it soon became evident that there were various problems in pole preservation which could be satisfactorily met only with a preservative that was clean, non-corrosive to iron, of low electrical conductivity, highly toxic towards wood-destroying organisms, of great permanence and available in large quantities at a low cost.

Pressure creosote-treated poles, by comparison with other treatments, had an excellent service record behind them. Creosote possesses to a marked degree the properties that are known to be essential for the prevention of decay. It is highly poisonous to decay organisms, and being an oil of low volatility and low solubility in water, it will remain in the wood for a long time.

However, creosote cannot be said to be strictly permanent. It is a mixture of oils of varying volatility; and some of the fractions, particularly the more toxic ones, gradually evaporate from the wood. It is this characteristic of creosote which explains the failure by decay of a creosoted pole at an average life of some place between 35 and 40 years.

The serious objections to creosoted poles though were that they were high in price, and they could not be used on city streets or in other populated districts without risk to passers-by. They could not be painted, and they presented a handling problem which was expensive and also objectionable to the linemen.

It was for these reasons that the Western Union Telegraph Co. started research under the direction of its chief chemist, Dr. L. P. Curtin, for the purpose of developing new wood preservatives.

In this research work, the aim of the telegraph company was to produce a clean, permanent preservative that would be available in unlimited quantities at a low cost. It appeared probable to the research department that clean and low-cost preservatives could be found only among inorganic substances. Accordingly they turned their attention to the study of various water-insoluble, inorganic salts, which would be poisonous to fungi and which could be forced into the timber by a one-movement pressure treatment process.

There were at this time several inorganic salt preservatives on the market; but as they were all water-soluble salts, they leached out of the timber rapidly when exposed to moisture, and for this reason, were of little value for pole preservation.

These water-soluble salts were on the market in accordance with the generally-accepted theory that a preservative must be soluble in water in order to be toxic against decay. It was the discovery of the incorrectness of this theory that led to the development of water-insoluble salts as wood preservatives.

In the research work Dr. Curtin definitely proved that all wood-decaying organisms evolve an acid which breaks down the wood fiber, and that this breaking down or decomposition is necessary before the wood fiber has any food value to the organism. With this fact definitely established, the problem of obtaining an insoluble inorganic preservative which is both toxic and permanent, was greatly amplified.

It was apparent that a number of inorganic salts could be found which would be almost insoluble in water, yet would be readily dissolved by the acid excretion of the fungus. Borates, carbonates, and arsenites of heavy metals, such as copper, mercury, lead and zinc, are typical of this class of compounds.

The latter, zinc, was the only metal of the group of salts which could be used in contact with iron; therefore, a series of experiments was made for the purpose of developing a zinc-arsenic wood preservative. When a solution containing zinc acetate and meta arsenious acid is exposed to the atmosphere, the acetic acid evaporates and a precipitate of zinc meta arsenite is thrown down.

Zinc meta arsenite is inexpensive, of low electrical conductivity, non-corrosive to iron, and of very low solubility in water. Its solubility is not exactly known, but is of the order of 25 parts per million parts of water, or less than that of limestone. So for all practical purposes, it may be said to be insoluble.

It is this insoluble characteristic which insures its permanence in the wood cells during the entire mechanical life of the timber. On the other hand, it is readily soluble in the weakest acid evolved by any of the fungi. Seventeen fungi of economic importance were studied and all shown to evolve an acid strong enough to put the ZMA in solution; and when in solution, it has a killing point toward wood-destroying fungus more than 24 times greater than that of creosote.

ZMA is applied to poles by the pressure process, the same as is other preservatives. It was developed by one of the biggest pole-using companies in the world, the Western Union Telegraph Co., and has been adopted by it as its standard preservative for pine poles, crossarms and construction lumber.

The cleanliness of ZMA poles appeals to everyone from the linemen to the president. They are light in weight and easy to handle, and accordingly they save labor in installation. They are low in first cost and more pleasing to look at. They may be painted any color desired, and they are permanently protected from decay or insect attack.

One Who Is Always Welcomed.

There's a man in the world who is never turned down, wherever he chances to stray. He gets the glad hand in the populous town, or out where the farmers make hay; he's greeted with pleasure on deserts of sand, and deep in the aisles of the woods; wherever he goes there's a welcoming hand—he's the man who delivers the goods.—Walt Whitman.

Accidental Prisoner Freed by Message on Cake of Soap.

Walking down the street past a hotel in Vancouver, B. C., Can., a passerby was struck on the head by a cake of soap. Around the soap was folded a business card, and on the reverse side of which was written this frantic S O S:

"Please telephone to the office of this hotel and tell them to send up somebody to unlock the bathroom door, Room 313, as I am locked in. Distressed."

A relief expedition was immediately sent to effect the rescue, and now the erstwhile prisoner is a firm convert to the theory that every hotel bathroom should have a telephone.

With the Manufacturers and Jobbers

Strowger Staff Introduces Two New Dial Telephones.

Designed specifically for use in elevator cars, the elevator telephone recently placed on the market by Automatic Electric Inc., will also be found useful for other locations where a compact, neat-appearing flush-type wall telephone is required. For elevator use, this telephone has been applied in many of the larger buildings which are equipped with P-A-X's, for communication purposes between the various elevator operators and the starter. Perfect synchronism and correct timing in the operation of banks of elevators is said to be assured by this means.

Elevator Telephone Designed for Elevator Intercommunication for Use with All Standard Type P-A-X's.

This instrument consists of a bakelite panel, upon which is mounted a transmitter, a small switch-hook with watch-case receiver and 24-inch cord, and a standard Type 24 dial, mounted flush. The transmitter is standard also, except that the mouthpiece is very small, projecting but slightly from the surface of the panel.

On the rear are mounted an induction coil, a condenser, a small buzzer instead of a bell, and a terminal strip. By means of four screws which fit into threaded holes, the whole compact panel mounts on a steel outlet box which is inset in the wall of the elevator car.

The other telephone instrument now available is the Type 4-A extension monophone, equipped with dial. This instrument is the standard Type 4 extension monophone, but has in addition a bracket mounted on either end of the cover, which holds a standard Type 24 dial.

This bracket is so shaped that it allows the monophone to be mounted on a flat wall, or on either end of a desk. The angles of the bracket are such that in any of these cases the dial is presented in a convenient position for dialing. This instrument can be supplied with either a booster circuit or a series circuit.

As an extension set, usable for either incoming or outgoing calls, this model will be found extremely useful in offices, bedrooms, hospitals, and many other places where an additional trunk to the main exchange is not justified, but where the extra service supplied by an extension set is rerequired.

The Kansas Telephone Co. Orders Stromberg-Carlson Board.

The Kansas Telephone Co. of Topeka, Kans., has just ordered a two-position No. 106 switchboard from the Stromberg-Carlson Telephone Mfg. Co.

The board will consist of 150 central energy and 50 toll and rural lines, and will be complete with power, machine and terminal equipment.

BOOK REVIEW.

TELEPHONE THEORY AND PRACTICE; THEORY AND ELEMENTS, by Kempster B. Miller. Published by McGraw-Hill Book Co. Inc., New York; 486 pages 6 ins. by 9 ins., 272 diagrams and illustrations. Price $5.

This book, the first of a three-volume series covering the entire telephone field from the technical side, deals with fundamentals which are necessary for a study of the practical phases of the telephone art.

Workers in the field, beginners and students during the past 15 years have heard from older men of the fame of "American Telephone Practice" by this same author, and some were fortunate enough to secure a copy of this classic of the telephone literature of the early days of this century. In those days every ambitious beginner in the field had a copy of American Telephone Practice and the older men likewise used it for reference purposes.

Since those days many changes have taken place in the equipment and practices followed in the industry. So when Kempster B. Miller, released from the press of active professional work, commenced revision of that standard book, he found it would have to be entirely rewritten—and thus came the decision to produce another book that would be to the incoming generation of telephone men what the old American Telephone Practice was to the generation which took part in the great development of the past 30 years.

Parts of the present volume on Theory and Elements have been published in TELEPHONY during the first half of this year, and they indicate the author's ability for clearly presenting in an interesting manner the technical aspects of the varied arts which find practical application in the telephone field.

The four introductory chapters deal with the history of communication and of the telephone. Elementary theory is dealt with in the next six chapters. This includes sound, voice currents, vacuum tube theory and magnetic materials. The succeeding six chapters which comprise the third part of the volume, deal with wire for equipment use, coils and electromagnets, resistors, condensers, flexible cords and joints and contacts.

The other volumes of the series which are in preparation are "The Telephone Exchange" and "Lines and Transmission."

The present volume of Telephone Theory and Practice, which is really introductory to the practical phases of telephone equipment and work, is carefully and accurately written, with the subject matter well selected and logically presented. Students and beginners will find the book an excellent manual while the older men will have in it an authoritative reference book from which to supplement their working knowledge of later developments in the art.

Prices in the Metal Markets.

New York, January 12: Copper—Unsettled; electrolytic spot and future, 10c. Iron—Quiet; No. 2 f.o.b. eastern Pennsylvania, $17.00@18.00; Buffalo, $15.50@16.00; Alabama, $10.50@14.00. Tin—Weak; spot and nearby, $25.80; future, $26.00. Lead—Quiet; spot New York, 4.75c; East St. Louis, 4.55c. Zinc—Quiet; East St. Louis, spot and future, 4.00-4.05c; Antimony, 7.37c. Quicksilver—$104.

New Type 4-A Extension Monophone Set, Equipped with Dial.

Turn Those Old Transmitters Into New Transmitters

The Suttle method makes your old transmitters just exactly the same as new. You simply send in your old transmitters and receive in return practically brand new transmitters, at a cost of from 30 to 50 per cent of new transmitters.

Try it this week. Send in those old transmitters, specifying Operation A-1. We guarantee your satisfaction.

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Supreme in Every Test

"BAG TYPE" DRY CELLS

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For convenience in transporting batteries to your stations and for facilitating installation, we recommend the BRIGHT STAR handy package of 3 at no extra cost.

We guarantee these Dry Cell Telephone Batteries to *outlast any competitive dry cells of their size.*

Besides supplying the requirements of over 500 Independent Telephone Companies, some of the largest telephone companies in the country use this dependable Bright Star product. Telephone engineers are invited to write for a sample cell for test.

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Chicago HOBOKEN, N. J. San Francisco

Condensed Telephone News

Officers of Companies Are Urgently Requested to Forward to Us Promptly All Financial and Other Statements as Soon as Issued and Any Items Relating to Construction, Rebuilding, or Changes in Their Plants and Systems

New Telephone Companies and New Incorporations.

DOVER, DEL.—The Boyer Valley Telephone Corp., Wilmington, Del., has been incorporated with a capital stock of $240,000; 7,200 shares of common stock. The incorporation papers were filed by the Corporation Trust Co.

SPRINGFIELD, ILL.—The Fairview Farmers Telephone Co. has been granted a charter to furnish service at cost to farmers in parts of Marshall county. Directors of the company are H. R. Petrick, Albert Vosberg and Frederick Kennitz, all of Varna.

Financial.

WABASH, IND.—Articles of amendment of articles of incorporation of the Miami-Wabash County Telephone Co. have been filed with the county recorder. By the amendment the common capital stock is increased 3,000 shares.

The total shares of capital stock are 6,000 with 1,000 preferred having a par value of $100 and 5,000 no par common shares.

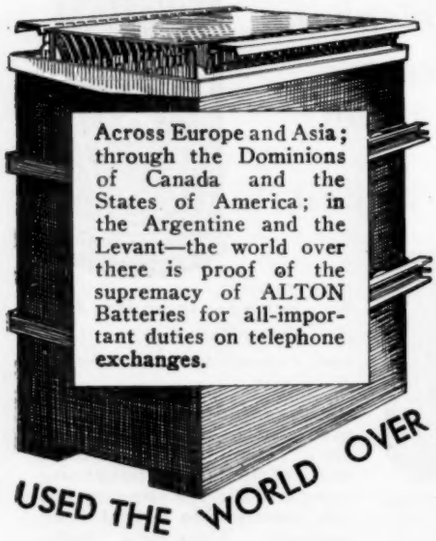
MILWAUKEE, WIS.—The Wisconsin Telephone Co. plans to issue $12,000,000 of additional common stock making total outstanding $40,000,000. The stock pays 8 per cent and is entirely owned by the American Telephone & Telegraph Co. It is reported the parent company advanced $12,000,000 on notes to pay for the Wisconsin company's improvements during the past two years. These notes will be exchanged for the newly issued stock.

The authorized Wisconsin company's preferred stock will be reduced from $8,000,000 to $5,000,000. Only $5,000,000 has been issued.

The company's gross earnings show about a 2½ per cent increase for 1930 over 1929 with a total of $19,000,000. Only 9,000 new telephones were added in 1930, which is about one-half of normal growth.

ALTON BATTERIES

are playing a big part in the world's telephony.


Across Europe and Asia; through the Dominions of Canada and the States of America; in the Argentine and the Levant—the world over there is proof of the supremacy of ALTON Batteries for all-important duties on telephone exchanges.

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Elections.

NEW WINDSOR, ILL.—At the annual meeting of the Union Telephone Exchange held at the town hall here, all the former officers and directors were relected except the treasurer, who was reelected by vote but refused to accept because of having too much other work.

The following officers were elected: President, W. R. Tracy; vice-president, R. H. Streeter; secretary, F. G. Blick; treasurer, Ralph Kincaid, succeeding H. G. Peterson; and John P. Petrie, F. G. Stohl and Arthur N. Peterson were reelected as directors.

MORRISTOWN, IND.—The annual meeting of the stockholders of the Ripley Farmers Cooperative Telephone Co. was held recently and the following officers were elected:

R. E. Pitts, Morristown, president; O. G. Leisure, Carthage, vice-president; H. B. Phelps, Carthage, treasurer; J. E. Harper, Morristown, secretary; J. A. McConnel, Gwynneville, manager. Directors are Harry Leisure and C. E. White, both of Carthage.

CLUTIER, IOWA.—Mrs. Agnes Adam, who for the past six years has held the position of night operator in the local telephone office, has been elected to the position of manager of the exchange by the stockholders of the Farmers Mutual Telephone Co.

In her application for the managership she stated stated she would continue as night operator and would have the assistance of her 18-year-old son, in the repair of telephones and other outside work.

Mrs. Adam succeeds Albert Hach and Frank Hadacek, who have served as comanagers of the exchange for the past three years.

The Farmers company also reelected John Parizek, president; Fred Kupka, secretary; and Peter Krutzfeldt, treasurer.

GILMAR, IOWA.—At the annual meeting of the Gilman Telephone Exchange the report of the secretary-treasurer, R. E. Hobbs, was submitted, which showed a total income from December 1, 1929, to December 1, 1930, of $3,718.88, with a total expenditure of $3,165, leaving a balance of $553.23, which is $24.69 less than the balance a year ago.

The exchange had a total of 6,684 long distance calls during the year with receipts of $1,618.25.

The old officers of the company were reelected as follows: R. H. Gannon, president; Ira Green, vice-president; R. E. Hobbs, secretary and treasurer. T. C. McClure and O. R. Swift were elected members of the executive board. Mrs. Theodore Strand was elected operator at the central office. The yearly switch fees and drop fees remain $5 and $1, respectively.

MORNING SUN, IOWA.—Officers and directors of the Mutual Telephone Co. were reelected at the annual meeting as follows: A. F. Reid, president; C. A. Thompson, vice-president and treasurer; Miss Maude Skinner, secretary; C. A. Peterson, manager; A. F. Reid, E. H. Hensleigh, H. E. Cummings, W. A. Thompson, W. H. Van Horn and Samuel Baird, directors.

VINING, IOWA.—James Riha was elected president of the Vining Telephone Co. at the recent annual meeting; J. M. Dvorak, secretary-treasurer, and representatives for the various lines were designated as follows: Star, John Cecak; Vining, Frank Cibula; northwestern, Joseph Yilek; Klondike, Joseph Uridil; York, Louis Dvorak; Oak, Charles Herink and town lines, John Riha.

The Star line annual meeting was held previously and the following reelected: Frank Stary, president; George Wacha, secretary; Joseph C. Hlas, treasurer; Joseph Wacha, Peter Zmolek, Charles Mochal, trustees, and John Cecak, representative.

WINTHROP, IOWA.—At the annual election of the Winthrop Telephone Co. all the directors were reelected: James Carmody for Middlefield township; George Siemmons, Liberty township; William Ferrin, Byron township; Harry Knowles, Fremont township; and Henry C. Unbehaun, Winthrop.

A meeting following the election resulted in the reorganizing of the board of directors. Henry C. Unbehaun was elected president; James Carmody, vice-president, and Hodge Merrill, secretary-treasurer.

Mrs. Lena James, who has served as manager of the telephone exchange the past year, was reelected at an increase in salary.

YORKTOWN, IOWA. — Officers of the Farmers' Mutual Telephone Co. have been reelected as follows: Harmon Handorf, president; John Maupin, secretary; and Ralph Hendricks, treasurer.

DUELM (p. o. Benton), MINN.—The Duelm Telephone Co. at its annual meeting, elected Anthony Chmielewski president, Frank Friehammer, vice-president, Charles Schaefer, secretary-treasurer, and Leo Scott, director.

HINCKLEY, MINN.—At a special meeting of the Cooperative Telephone Co. officers were elected as follows: Chas. Gass, Sr., president and Warren Deer, secretary. James Haney was formerly president of the company.

PRATT, MINN.—William Wanous was chosen president of the Pratt Telephone Co. at its December meeting. Other officers are: Vice-president, Knute Moe; secretary, L. A. Degner; treasurer, A. B. Thamert, and director, Peter Plotz.

Construction.

FORT MEYERS, FLA.—Inauguration of service over the Boca Grande line has completed an expansion program during 1930 of the Inter-County Telephone & Telegraph Co. which cost more than $70,000, it has been announced by J. S. Gillentine.

"Telephony's" Engineering Data.

By B. C. Burden.

Index, Maintenance Practices.
January 17, 1931.
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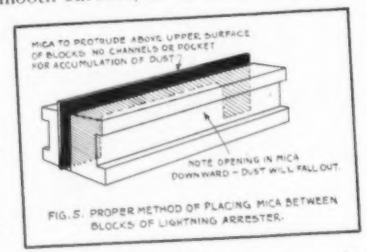
When a telephone is removed, the jumper wire corresponding to that line should be unsoldered on the line side of the frame and the ends turned back over the fanning strip. The solder on the terminal lug should be removed by touching the flat side of the lug with a hot soldering iron. The solder on the lug will run onto the iron and the iron should then be quickly removed and the loose solder flipped off. It may be necessary to repeat this operation several times in order to remove all the solder.

This method of leaving the jumper connected on the switchboard side is preferable to removing it entirely, for frequently the vacated number will be later reassigned to the same cable pair and may be easily reconnected.

Distributing frames because of their construction are more or less difficult to keep clean. The best method of removing the dust that settles on jumpers, iron work, protectors, etc., is by means of a vacuum cleaner, either the small portable type or a regular cleaner with hose attachments. A rag lightly moistened with furniture polish can be used to wipe the exposed portions of the iron work.

The use of a vacuum cleaner is especially desirable around relay forms, for the dirt, if disturbed by brushing, tends to get into the relay contacts via the holes often present in the mounting plate and may cause faulty operation of the relays.

On the protector side of the main distributing frame, the protector blocks should be inspected, although not frequently, to see that all blocks are in proper operating condition and not partially grounded. Blocks which are badly burned, should be replaced. In cleaning, carbon blocks should always be wiped on a smooth surface, never on a rough one as this destroys the treated surface of the block which prevents them from becoming easily grounded. The mica should always be placed as shown in Fig. 5 to prevent dust from collecting.


MICA TO PROTRUDE ABOVE UPPER SURFACE OF BLOCKS. NO CHANNELS OR POCKET FOR ACCUMULATION OF DUST.
NOTE OPENING IN MICA DOWNWARD - DUST WILL FALL OUT.
FIG. 5. PROPER METHOD OF PLACING MICA BETWEEN BLOCKS OF LIGHTNING ARRESTER.

Heat-coil arrangements occasionally cause trouble by "going high." For high-resistance faults which center at the main distributing frame, heat coils are one source of the trouble.

If it is desired to test all the heat coils to make sure there are none which are of high resistance, a buzzer and battery connected in series can be used by adjusting the buzzer to operate on five ohms or less and not operate on higher resistances. The terminals of the buzzer and battery in series are connected directly across the heat coil terminals on the frame. The resistance of present-day coils run from three to four ohms.

"Telephony's" Engineering Data.

By B. C. Burden.

Index, Maintenance Practices.
January 17, 1931.
No. 7-C, Page 5.

Ringing Machines.

Ringing machines may be divided into two classes—the vibrating reed type, and the motor-driven type. Motor-driven ringing machines require attention mainly as to oiling, cleaning of commutators, brush replacements, and cleaning of the machine and mounting. A routine should be established for the periodic oiling of rotating equipment, making sure that the period is short enough to eliminate any possibility of the machine running dry.

Commutators can be cleaned by holding a rag against the commutator while it is rotating or, if badly tarnished and dirty, by running a piece of fine emery cloth back and forth across the commutator a few times while it is in motion.

Machines which have been in operation for a long time may necessitate removing the armature, turning down the commutator in a lathe, and possibly under-cutting the mica. An inspection will reveal whether this is necessary. Brushes should be replaced before they are worn so short as to be erratic in operation.

Ringing machines of the vibrator type are more apt to give trouble than are motor-driven generators, but both their initial cost and the low running costs make them a favorite in the smaller exchanges. The trouble can generally be averted if the theory of operation of the ringer is understood and if data is obtained from the manufacturer on the optimum spacing of the various moving parts.

Most troubles with this type of machine arise from improper adjustment of the contact spacing, or from the contacts becoming pitted. If data is not available in an exchange relative to the theory and maintenance of the ringing machine, write the manufacturer and he will be glad to supply the necessary information. A test bell should be located near the ringing machine so that the output voltage can be occasionally tested. A resistance of 1,000 ohms should be placed in series with the bell.

Harmonic ringing machines of the vibrator type are more troublesome than the straight 20-cycle machines, for the frequency must be kept constant or faulty ringing will result. Inasmuch as the ringing frequency is affected by changes in contact spacing, it is very important that the spacing be maintained at its correct value on each vibrator. Thickness gauges offer an accurate means of adjusting the gaps to correct values.

The fundamental frequency of the vibrating reed is accurately adjusted at the factory and will seldom require readjustment.

Ringing machines of the type which convert direct current to an alternating low-frequency ringing current are usually arranged with a pole-changing switch which can be thrown to reverse the direction of current flow through the contacts.

These switches should be thrown so that the current flow through the contacts is reversed every other day. This tends

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By B. C. Burden.

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to reduce the pitting due to metal being deposited from the positive contact onto the negative contact. The periodic reversal of the current flow through the contacts reverses the process and prevents large pitts from forming.

The latest machines are designed to operate with only a slight amount of sparking. Hence if excessive sparking is observed, there is a possibility that the condensers shunted across the contacts may be open or partially short-circuited; or if the contacts are not properly spaced, sparking may be set up.

An alternating current voltmeter is a convenient instrument to have available to check the output voltage of ringing machines. The 20-cycle ringing machines are usually designed to give ringing voltages of from 75 to 90 volts. The voltage of the higher frequencies used in a harmonic ringing system may run as high as 150 volts.

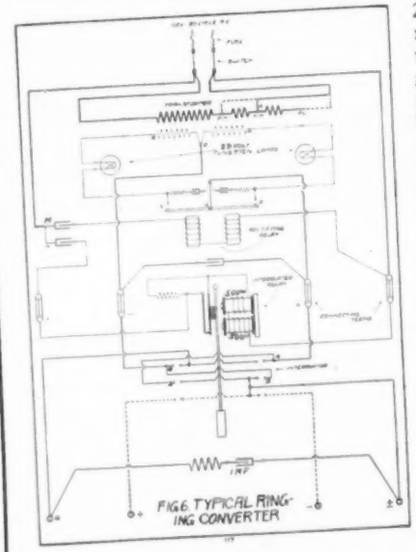


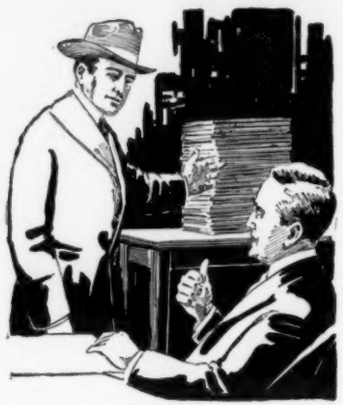
FIG. 6 TYPICAL RINGING CONVERTER

Fig. 6 shows the schematic wiring of a typical A. C. ringing converter of the type which rectifies the 110-volt alternating current and then pulses the rectified current at the desired frequency (20 cycles) by means of a vibrating reed.

A new ringing machine, known as the "Telering," uses an entirely different principle from previous machines of the vibrating reed type. The principal feature which should appeal to the maintenance man, is the fact that this machine has only one vibrating contact. These machines will operate for many months with little or no attention.

The adjustment of the Telering is very simple. It consists in merely backing off the contact screw until the reed stops vibrating, and then turning the screw slowly inward until a point is reached where the reed vibrates at its natural frequency, which condition can be readily detected visually.

A data sheet which will appear in the near future will describe the circuit and theory of operation of this new ringing machine.



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president. An exchange at Lake Placid was opened on December 15, 1930.

The local telephone system is owned by Barron G. Collier. Long distance service is available through a working arrangement with the American Telephone & Telegraph Co.

Mr. Gillentine said approximately the same amount spent last year would be expended in 1931 on improvements.

CULLOM, ILL.—The Cullom Telephone Co. has purchased the poles replaced by the Central Illinois Public Service Co. and will use them in repairing the local plant. The entire plant is being gradually rebuilt and copper wire is being used.

GRAND MARAIS, MICH.—A new telephone line 26 miles long, constructed at an estimated cost of $20,000, now connects one telephone here with the outside world. Grand Marais has been without telephone service since 1927 when fire destroyed the line from Seney, Mich. The one instrument in the town is now in the Green Shingles hotel.

SORUM, N. D.—The Sorum Telephone Co. has been making improvements in its plant. Telephone poles were set and new wires placed.

The company had been making plans for some time to establish service to Strool from Sorum.

CHILTON, WIS.—The Commonwealth Telephone Co. proposes to erect a new building in the near future. As soon as the new construction is completed, the company plans to install common battery equipment, including a modern switchboard.

Miscellaneous.

JASPER, ARK.—Hugh Raney, former owner and manager of the Jasper Telephone Co., has again assumed its management. He succeeds his brother, Albert Raney, present owner of the company. The latter will devote his entire time to his real estate business.

CLINTON, ILL.—Walter D. Knowles, general manager of the Illinois Central Telephone Co., recently announced that, effective January 1, Clinton became the central office for the accounting department of the company.

The accounts of five districts of the state have always been kept in Clinton, but with the new change the accounting departments from 29 towns in the state were moved to the general office here. There are approximately 17,000 subscribers in the 29 towns.

WATSEKA, ILL.—Subscribers of the Wabash Valley Telephone Co. of Williamsport, Ind., have appealed to the circuit court from an order of the Illinois Commerce Commission denying the Cheneyville Telephone Co. the privilege of serving territory now occupied by the Wabash Valley company. The appeal will be heard during the March term of court.

INDIANAPOLIS, IND.—In a statement issued January 5, Samuel Insull, Jr., president of the Midland United Co., Chicago, said that none of the properties in the Midland group is in the telephone business in Indiana and that it was a current "misapprehension needing correction in the public mind."

"Neither the Midland United Co. nor any of the associated companies in the so-called Insull group are interested in Indiana telephone companies," the statement said, continuing: "Samuel Insull has no interest in the Associated Telephone Utilities Co. which is not under his management, nor in the Indiana Commercial Telephone Corp., nor in any subsidiary of either of these institutions."

Relative to the general misconception, the statements said that "any affiliation of officers or directors of companies in the so-called Insull group with the telephone business would be a private affair of the gentlemen in question."

SILER CITY, N. C.—The Central Carolina Telephone Co., with headquarters in this city, has been acquired by the Associated Telephone Utilities Co., of Chicago, Ill., which enters the Southeastern territory for the first time. The Central Carolina operates some 29 exchanges with about 3,500 stations in North and South Carolina.

LIMA, OHIO.—As a result of a sales campaign, 139 new telephones and 111 program service equipments were installed during December by the Lima Telephone & Telegraph Co., according to a report by O. J. Neuman, secretary and general manager.

The campaign was conducted by employes of the company from December 1 until noon of December 24. Similar campaigns have been held before, and another is scheduled for 30 days preceding Easter, Mr. Neuman stated.

The number of telephones now in service in Lima was given as 12,350 and the number of program service subscribers as 1,350.

DUFUR, ORE.—The Dufur Local & Long Distance Telephone Co. has been purchased by C. H. Miller, of Redmond, effective December 21, 1930.

The new owner immediately outlined a construction program and ordered new equipment which includes a modern switchboard and underground cable conduits. Future plans include the construction of a modern exchange building.

Mr. Miller is an experienced telephone man, having been in this work for more than 20 years.

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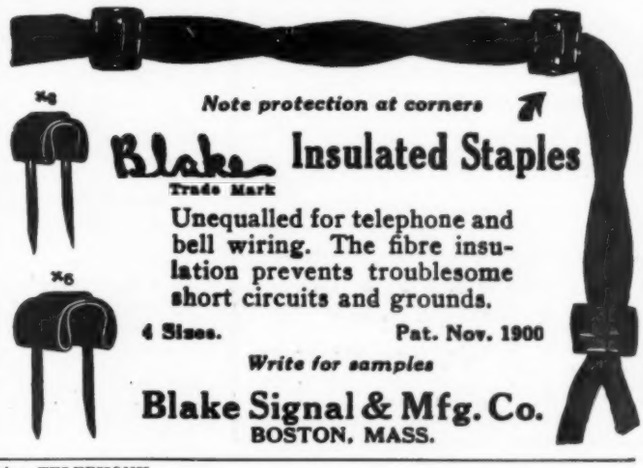
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WHAT THE COURTS AND COMMISSIONS ARE DOING.

(*Continued from page 26.*)

according to annual revenues, with installation charges standard for each group.

KANSAS.

January 12: Hearing in Topeka on application of the Mijo Telephone Co. for permission to make certain changes in rates for service at Spring Hill and Stilwell, and for approval of a mortgage of $19,000 on its property.

January 16: Hearing in Hiawatha on application of the Hiawatha Mutual Telephone Co. for permission to sell its telephone plant and property at Hiawatha, Brown county.

January 16: Hearing in Hiawatha on application of the American Telephone Co. for a certificate of convenience and authority to transact the business of a public utility at Hiawatha.

January 16: Hearing in Hiawatha on application of the American Telephone Co. for permission to make certain changes in the type of service, and for permission to make certain changes in rates for service in Hiawatha and vicinity.

January 24: Hearing in Cimarron on application of the Western Telephone Corp. for permission to make certain changes in rates for telephone service at Cimarron.

MISSOURI.

January 3: Complaint of R. E. Ferguson, et al. vs. Missouri Standard Telephone Co., alleging that the rates charged by the Missouri Standard company for service at its exchange in Buffalo are unreasonably high, dismissed.

NEW YORK.

January 9: Petition filed by the Port Byron Telephone Co. for consent to the sale of its works and system to the New York Telephone Co. for $13,500. The company operates in Byron and South Byron and vicinity, serving 254 subscribers. It is stated in the petition that the company's plant was badly damaged by a sleet storm in 1929 and that the present management does not wish to undertake new financing required to put the property in proper condition. The New York company, it is stated, is prepared to make necessary improvements if consent to the sale is given.

January 9: The Boston Valley Telephone Co., serving 316 subscribers in Boston, Golden and Patchin and nearby places in Erie county petitioned for consent to sell its works and system to the New York Telephone Co. for $16,500. The petition states that the present ownership does not wish to undertake financing necessary for reconstruction and plant improvement and that, if consent to sell is granted, the New York company is prepared to improve the existing plant.

OHIO.

January 10: Order issued fixing valuation of Ohio Bell Telephone Co.'s property at $104,282,735. No rates were established as 30 days are given in which either side may file exceptions. The case has been before the commission for a number of years.

WISCONSIN.

January 5: Approval given application of the Wisconsin Telephone Co. for authority to increase its rates at Marinette.

The new net rates per month are: One-party business telephones, $4.25; two-party business, $3.75; one-party residence, $2.50; two-party residence, $2.15; four-party residence, $1.90.

January 5: Authority granted the Auburndale Telephone Co., of Auburndale, to issue $10,000 in six per cent gold bonds under a 10-year first mortgage.

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